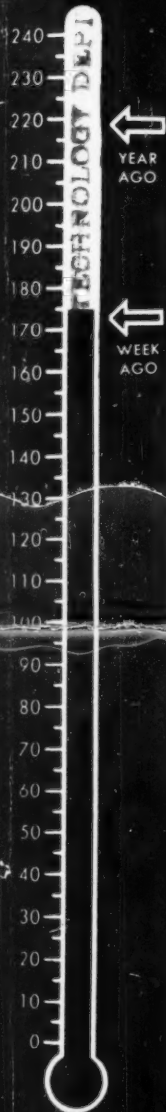


BUSINESS WEEK

JULY 6, 1946



U. S. Steelmasters, East and West: Fairless and Mathesius meet at Geneva (page 8)

BUSINESS
WEEK
INDEX

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July - Sept. 1946

Pressure groups are nothing new

AMONG the earliest "pressure groups" were the legionnaires of Rome. They "elected" their officers who dealt with the government, and forced higher and higher wages, more and more special privileges at the expense of the public, and less and less work. Government officials became so cravenly afraid of the legionnaires that they gave in at every show of force.

Just to the north were free men, the Goths, who believed you have

to work for what you get. By hard work they gained strength, and built superior weapons.

Then they overran the legionnaires, abolished all their privileges, and enslaved them.

The trouble was that the Roman public was enslaved, too. They had been stupidly standing by, saying "What can I do," while the government sold its soul to the minority pressure group.

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A development of
B.F. Goodrich
FIRST IN RUBBER



Man missing

A typical example of B. F. Goodrich development in rubber

THE man who *isn't* in the picture is the important part of this story. He's the maintenance man who used to spend long hours—and many dollars—repairing the drives on oil pumps like this one in a southern power plant. They had two pumps for each generator because they knew that breakdowns were inevitable. And if oil failed to reach the generator bearings, thousands of people would be without light and power.

They thought of replacing the noisy, hard-to-maintain gear drives with V-belts something like the one that drives the fan in your car. Many years ago

B. F. Goodrich developed the very first V-belt for just that purpose. V-belts are strong, quiet and need very little attention once they're installed. But they do stretch slightly. And there was no way to take up more than a fraction of an inch stretch on these drives.

Then the superintendent heard of the B. F. Goodrich wire grommet V-belt. In it, two endless steel cables—called grommets—are embedded in abrasion-resistant rubber. This belt was developed by B. F. Goodrich for heavy duty service where low stretch and high flexibility were needed. A test set was installed on one of the

drives a year and a half ago. These belts have run 24 hours a day since then *with absolutely no stretch—and absolutely no maintenance.* Now, the rest of the drives are being equipped with grommet belts. That's why the man is missing from the picture. They don't need him on that job any more—a typical result of the steady improvement that is being made in rubber products by B. F. Goodrich research. *The B. F. Goodrich Co., Industrial Products Division, Akron, Ohio.*

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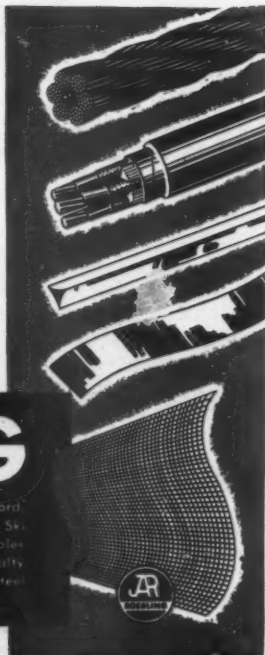
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BUSINESS WEEK • July 6, 1946



MR. FRIENDLY DROPS IN ON A CUSTOMER!

"Fine time to think of aviation insurance!" said Bill Buttercup as he gazed at the earth 10,000 feet below!

"Fine time to worry about crackups, fires, lawsuits and doctor bills!"

He was telling Bill Buttercup what he thought of Bill Buttercup when he heard a knock just above his head...

"May I come in?" said a voice. "I had an appointment to see you at four o'clock... it's just four!"

A hand reached down and presented Buttercup with a card that said, "Mr. Friendly, The American Mutual Man!"

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Well, Buttercup signed at ten thousand feet... then Mr. Friendly opened the door of the plane and adjusted his parachute!

"Sorry to run!" he said. "But I've got a five o'clock appointment with the Calhoun carpet people, just below!"

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WASHINGTON BULLETIN

A POLITICAL VETO

Win or lose on price control, President Truman strengthened himself politically by his bold and unexpected veto of the weak price control extension bill (page 15).

He strengthened himself with labor. Except for John L. Lewis, labor leaders have been unwilling to risk a free-for-all in which both wages and prices were uncontrolled. They have had an advantage under past policy which relaxed wages more than prices. Both Green and Murray had been urging a veto.

As for farmers, Truman's action cut both ways. The vetoed bill made concessions to farmers, but initially it would have held farm prices tighter than the things farmers buy.

Price Rise Was Inevitable

Business opinion was mixed but in the main favorable, since the veto pleased both those who didn't like the congressional bill and those who don't like price control at all.

As for the consuming public, Truman probably strengthened himself by his radio speech in which he tried to pin responsibility for any inflationary upsurge on Sen. Taft and his fellow Republicans.

Politically, Truman had little to lose by his veto. Under the rejected bill, prices would inevitably have risen steeply (BW—Jun. 29'46, p5), maybe a little slower than under no law at all—there's no telling. But Truman and his Administration would have taken the blame, and it was this final consideration that led to the surprise veto, confounding not only Washington commentators (including this one) but even OPA officialdom.

Hard on the Wheelhorses

One thing that Truman has lost is the goodwill of the Democratic leaders in Congress. They were shocked by the veto. They advised him to sign, thought he would. But though he angered them, he may have won their respect.

This feeling of respect may be contagious, and might prove Truman's biggest gain. He has been cursed by a wishy-washy reputation. Twice now (the rail strike was the first) he has taken dramatic action and asserted leadership for better or for worse.

WAR CONTRACT PROBE

Fraudulent practices, rather than large profits as such, will be the target of the Mead committee's inquiry into war con-

tracts this summer. Its work has disclosed that, despite safeguards set up, some flagrant cases have managed to slip through, and these will be exposed in public hearings.

Sen. Mead is particularly bent on probing into "letterhead companies" and other dummy concerns.

The New York senator has the full support of President Truman, former chairman of the committee. Truman will issue orders to give the committee access to contractors' income tax returns, and to contracts which previously have been classified by the procurement agencies as secret.

WHEAT CARS SPEEDED

With the Dept. of Agriculture's relief grain buying program winding up so successfully that the department is able to drop its rule requiring farmers to sell half the grain they place in elevators (BW—Jun. 29'46, p7), the emphasis in the feed-Europe operation has shifted back to physical transportation of the wheat.

Commodity Credit Corp.'s pressure for speed is such that freight cars are being returned empty from the ports to the wheat country—and brimful elevators are still having to refuse to take more grain. CCC is trying to keep its shipping procedure under cover, fearing the protests of car-starved shippers over the empty runs.

NO TIME FOR STUDY

Ever since 1915, when the Taylor stop watch system churned labor into a furor, the annual Army and Navy appropriation bills have carried a prohibition against any time studies on work done in arsenals and the like. The taboo, fostered by the International Assn. of Machinists, became particularly irksome during the war.

Beaten last year in an attempt to eliminate the ban, the Navy came back this year with a proposal to modify it. Employees would be given the right to check any time studies made, and to protest through regular grievance machinery against any unreasonable work requirements laid on them.

It was clear sailing until Congress wrote into all appropriation bills a provision effectively denying the right of government employees to strike. This meant that, without the strike weapon, any protest against time studies might be fruitless. This week the Navy's proposal, written into the bill by the Senate,

was knocked out by a Senate-House conference committee, which thus left the time study ban in full effect.

CAB CHALLENGE

Surface carriers, whose applications to the Civil Aeronautics Board for air routes have invariably been denied, believe insult was added to injury in a recent speech by Oswald Ryan, CAB vice-chairman. Ryan challenged the surface operators to take their case to the courts if they consider themselves aggrieved by the board's interpretation of congressional intent in the Civil Aeronautics Act.

Waterman Steamship Corp., one of the unsuccessful applicants for a Latin American air route, intends to accept the challenge if CAB refuses to grant a rehearing. Officials of Waterman, now operating nonscheduled flights, assert that the board, in deciding the Latin American case on the broad basis of comparative public interest, abandoned the controversial interpretation of Sec. 408(b) of the act formerly cited in rejecting surface carrier applications.

Earlier decisions, according to Waterman, were based on that portion of the law which permits CAB to reject applications tending to restrain competition. The Latin American decision, however, was based solely on the grounds of "public interest." Waterman feels that CAB made the shift to escape from a shaky position, and to forestall the very court appeal Ryan suggested.

AIR FREIGHT AGREEMENT

Scheduled airlines, with one outstanding exception, have filed for Civil Aeronautics Board approval an agreement covering publication and maintenance of consolidated air freight tariffs. Since the document covers mainly procedure and allocation of expenses, and leaves to each line the right to determine its own rates and regulations, participating carriers expect the board to approve.

Twelve have signed and others indicate they will do so. The carriers hope their new plan will simplify air freight service, reduce the cost of filing tariffs, and eliminate variations in classifications, regulations, and practices.

The holdout is Northwest Airlines, whose separate air freight agreement with Railway Express Agency the board has declined to approve pending an investigation on grounds that it may be adverse to public interest as well as in



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violation of the Civil Aeronautics Act.

The board feels that Railway Express should not be permitted to engage in the air freight field, in view of its dominant position in air express.

Strong likelihood exists that CAB's investigation of Northwest's air freight deal may extend to Railway Express' air express agreement with the airlines.

BIG FARMS LOSE WATER

Large-scale southern California farmers have just learned about one of the slips that can come between the cup and the lip. They went down the line in Congress this session to insure that the Pine Flat Dam on the Kings River, part of the second phase of the Central

Valley irrigation and flood control program (BW-Jun.1'46,p21), should be built by the Army engineers. They knew that if the project were handled by the Bureau of Reclamation, big farms would have to be split up, under the 160-acre rule of irrigation law, in order to get water.

Although the 1944 flood control law

What Congress Has Done—And What It May Do

In the home stretch of this congressional session, the legislative picture is confused. This is normal. Chance of passage of almost any measure that is still hanging-fire this late in the session is always a gamble. Little that is controversial is likely to get through. There is always a mass of comparatively minor bills, most of which will get lost in the shuffle, some of which may happen to slip through.

The flurry created in Congress by the veto of the price control law may improve the chances of some minor bills if it extends the session. But it's no help to controversial bills like minimum wage revision—not when the President has angered his own leadership by ignoring their advice that he sign the price measure.

Once Congress goes home, it's not likely to come back this year. On that basis, here's what the Congress has done since Truman took office and what it still may do.

Have Become Law

Draft Extension. Fathers and 18-year-olds excluded, 19-year-olds in until Mar. 31, 1947. Military pay increased and other incentives offered for enlistment. Administrative moratorium on draft through July and August.

Full Employment. Sets up an economic advisory council to report annually on employment prospects and a joint congressional committee to consider the report.

Government Reorganization. Permits President to rearrange government agencies, with numerous exceptions, and subject to a congressional veto.

Airport Construction. Federal-aid bill provides 50-50 financing of a billion-dollar five-year program.

Emergency Housing. By \$400,000,000 subsidy of building materials production, and other measures, stimulates house building.

Surplus Ship Sale. Authorizes sale of war-built surplus ships.

Petrillo Curb. Prohibits requiring employment of standby musicians and interference with rebroadcast of foreign programs.

War Powers Act Extension. Extends priority and allocation powers until June 30, 1947; certain other emergency powers till Mar. 31, 1947. Forbids resort to this law to control prices.

Expected to Pass

British Loan. Approves a \$3,750,000,000 credit to be repaid over 50 years at 2%.

Labor Law Inquiry. Congress will authorize some sort of investigation looking toward long-term legislation on labor relations.

Social Security. Raises unemployment insurance tax of 1% on employer and employee to 1½% for five-year period. Bill will probably carry increases in benefits to the aged, the blind, and to dependent children; bring maritime workers under unemployment insurance; and give veterans' families survivor insurance.

Good Chance to Pass

Stockpiling. Authorizes a permanent program of stockpiling critical materials under military control.

Trademarks. General revision of old law sets up a register and otherwise protects trademark owners.

Railroad Antitrust. Would exempt present conference rate-making practices from antitrust law, thus nullifying pending government suit.

Statutory Limitation. Sets a two-year limit on private suits for violation of wage-hour law and other federal laws which carry no statutory limitation of their own.

Still a Chance

USES. Senate measure would return U. S. Employment Service to states next January—a compromise

between House action for immediate return and Truman request for federal retention until mid-1947.

Commerce Dept. Creates three assistant secretaries of commerce.

Atomic Energy. House committee stalling action on Senate bill providing civilian rather than military control of atomic power.

Superseniority. Would eliminate liability of employers who acted in belief that veterans had superseniority prior to Supreme Court's decision upsetting selective service regulation.

Farm Research. Expands agricultural research and sets up study of farm marketing and distribution.

Wool. Would continue wool purchase subsidy system and set up a research program.

Dead

Labor. Truman's antistrike proposal is dead unless there's a serious strike.

Minimum Wage. Increasing present minimum wage level.

Science. Program for federal subsidy of scientific research will go over until next year.

Executive Reorganization. Congress will not veto Truman's first three agency reorganization plans.

Congressional Reorganization. Reduces number of congressional committees, increases pay of congressmen, and otherwise streamlines legislative machine.

Mergers. Amends Clayton act to restrict corporate mergers through acquisition of assets.

Housing. Sets up permanent, many-sided government program for federal subsidy.

Federal Trade Commission. To broaden court review of the commission's orders.

Farm Credit. Centralizing all farm loan agencies in an independent body.

Fertilizer. Setting up government-owned fertilizer plants.



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established the principle that water from future Army projects should be distributed under the reclamation law, everyone assumed that since Pine Flat was authorized in that same law, it wasn't covered by the general principle.

Congress plumped for the Army, but the Reclamation Bureau lawyers got to the President. In approving the appropriation he announced that he considered the project covered by reclamation law—and impounded the money until landowners and the Bureau of Reclamation get together on water-use contracts.

THE COVER

When United States Steel Corp. prepared to put the \$202 million Geneva steel plant into operation for the government in 1943, it picked the best steelmaker it had to do the job—Dr. Walther Mathesius. German-born and trained, Dr. Mathesius had been with United States Steel since 1911, was vice-president in charge of operations for its management subsidiary, United States Steel Corp. of Delaware, when drafted for the presidency of Geneva Steel Co., the company set up to operate the government-owned plant.

Now that the Geneva plant has been purchased by United States Steel (BW—Jun. 22 '46, p. 15), Utahans are praying that Mathesius will be continued as operating head there, because of the prestige he lends to the industry in the region represented by the Western States Council.

But whether Mathesius will remain beyond the period necessary to convert Geneva from war to peace production is questionable. Plans for the Utah plant's future are still in the making (page 20), but United States Steel's West Coast subsidiary, Columbia Steel Co., is slated to operate Geneva eventually. And Mathesius is too important a man to be relegated to the post of a plant manager. United States Steel's president, Benjamin F. Fairless, probably has pretty definite plans for Mathesius, but isn't talking—yet. Mathesius, of course, may want to stay; he is the "father" of Geneva, urged United States Steel to build a plant there as long ago as 1934.

A shirtsleeve type of operator, Mathesius was in his element as head of Geneva Steel. He accomplished near-miracles in obtaining uniform quality, cut production costs to the point where it is claimed Geneva is one of the most efficient members of the Big Steel family.

The Pictures—Harris & Ewing—15; Press Assn.—24, 86; Int. News—18; Acme—19; Soil Conservation Service—21, 22; Keystone—24; McGraw-Hill World News—105, 109; European—106.

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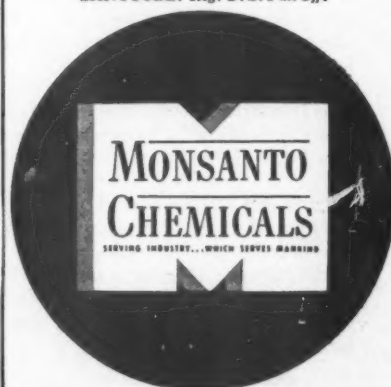
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BUSINESS WEEK • July 6, 1946

THE OUTLOOK

BUSINESS WEEK

JULY 6, 1946



It isn't going to be easy to restore anything which resembles effective price control even if Congress passes a law that suits the President.

Even before the end of the war, there was something reminiscent of prohibition in the popular attitude toward enforcement. Recently this buy-at-any-price feeling has quite clearly been spreading.

Every day that passes without legal controls will make it just that much harder to reimpose ceilings. The incentives to compliance aren't the same as when the General Maximum Price Order was accepted in bleak 1942.

•
Efforts of big manufacturers and retailers to hold prices, at least temporarily, may affect congressional action importantly.

If price rises the next few days aren't sharp, there will be less push for a new law. Soon it will be mid-July, time to adjourn in any ordinary year. And this is an election year.

And if initial price rises aren't too sharp, there is a chance that the consumer rush to beat the upward spiral will moderate for a time.

However, the Washington price stabilizers expect manufactured goods to go up 20%, foods 15%, and the cost-of-living index about 15% almost as fast as new price tags can be written at various distributive levels.

•
Production is the only thing that can prevent a destructive inflation now. And output can't be speeded by controls adopted in desperation.

Plants turning out soft goods can, in most cases, meet the most explosive demands rather quickly. Shoes are an example; output broke all records at 48,000,000 pairs in March and is being well maintained.

There is more doubt in heavy lines. Can Detroit get enough steel for 6,000,000 passenger cars in the next year? Can we get the lumber and furnaces for a million housing units in 1947?

•
Steel is the crux of the production outlook just as it has been ever since the beginning of reconversion.

Output of this basic industry never has topped 90% of capacity since the end of the war. The price-cost squeeze at times has been to blame.

Yet freedom from price restraint couldn't assure 100% operations.

Theoretically, steel mills would pay overtime to boost output if they could be sure of profits. But more hands might not make the difference now. There's a scrap shortage that will take time to cure.

And there are many economists who don't believe present capacity is enough to meet all demands. For a final answer, we shall have to await the wearing off of the effect of the steel and coal strikes earlier this year.

A few months of sustained output should uproot duplicate orders.

•
The auto industry is currently engaged in one of its characteristically rapid production expansions. But it isn't yet up to this spring's high.

The best weekly rate we have hit since the end of the war has been 3,500,000 cars and trucks annually. But, with the many setbacks, the first half of 1946 saw only 654,000 passenger car deliveries, 350,000 trucks.

The industry's goal was 2,320,000 passenger cars alone for the half.

The monthly rate for the last three months has been little over 150,000 autos. That's a long way from the 500,000 projected for midyear.

There still are problems of thin copper for radiators, tin for solder, steel

THE OUTLOOK (Continued)

BUSINESS WEEK

JULY 6, 1946

for bodies and fenders, castings for engines. Meeting bogeys will be a matter of building up balanced inventories and of labor peace.

•
Priorities in the housing field already outrun supplies of materials. Overriding priorities now are being issued for vital projects.

Civilian Production Administration authorizations for "essential" construction other than housing were cut to a daily average of \$9,129,000 for the first ten working days of June. A month earlier the rate was \$29,110,000 daily.

Clearly the building materials squeeze is still extremely tight.

But lumber output is rising. The industry has managed to increase employment to 558,000, a twelve-month rise of nearly 10%. And April output, at 2,889,982,000 b.ft., showed an increase of 14.2% above that of a year ago.

•
One cynical viewpoint on present inflationary conditions is that supply and demand can be brought into balance by letting prices soar.

If milk prices go up several cents a quart, families in low income brackets will use less. The surplus would go into other dairy products—butter, cheese, ice cream—eliminating the shortages in these lines.

If auto prices go high enough, fewer people will be able to buy cars (even on time payments), and there won't be any more worry about steel.

Actually, however, a lot of items might sell cheaper without ceilings. Meat and butter could well move above recent official prices but possibly at considerably less than the familiar black market figures.

Car dealers who were asking \$200 to \$500 bonuses on a new auto might be quite happy simply to restore traditional markups and keep their friends.

•
Behind all the "maybe" of the price situation, economic factors could hardly be more explosive.

Consumers' incomes are rising, the annual rate of \$157 billion now comparing with the war peak of \$160 billion and with \$93 billion in 1941.

And consumers are spending more. Taxes are lower (\$17 billion against \$21 billion in 1945) and savings are less (\$18 billion against \$35 billion). Thus expenditures are at a rate better than \$122 billion. (They were \$104 billion in 1945, \$75 billion in 1941, and \$62 billion in 1939.)

Individuals' liquid assets, quite aside from high current incomes, are put at \$145 billion against \$50 billion before the war.

Foreigners are bidding against us in work markets and at home. They have undreamed-of dollar balances (Latin America) and excellent arguments that we should lend to them so that they can buy from us (Europe, China).

And we have no labor surplus to make goods to meet all this demand.

•
The federal government is cutting down available credit by buying its bonds from the banks. But it is paying with money borrowed beyond current needs in the Victory Loan, not by revenues in excess of outgo.

Real inflation could pad taxes, give us a budget surplus, but we would soon need the money for a new WPA.

FLY *ten years into the future*

via Martin Airliner



Solid Comfort! Sink into the seat's soft embrace . . . rest your eyes with the soft lights and smart styling . . . revel in the freedom from noise, vibration and drafts. No doubt about it, this is *the* way to travel! And best of all, the cost is within anyone's reach.

Radar Probes Darkness, as well as fog, snow, or rain, to give pilot a clear, unmistakable picture of what lies ahead. Many other new war-born developments, including electronic automatic pilot, are incorporated in Martin airliners, to permit dependable all-weather flying.

TEN YEARS AHEAD of today's comparable transports . . . that's the story of the new Martin airliners! A decade ahead in design and development, yet you'll be flying on them in a matter of months!

Now being built for the nation's airlines, these ultra-modern Martin airliners will waft you through the sky at a 5-mile-a-minute clip. They'll pamper you with their soft, restful seats, automatic air conditioning and other luxurious comforts. You'll relax, secure in the knowledge that these planes carry radar, electronic altimeter and other new devices to re-emphasize dependability. And you'll arrive at your destination refreshed, immaculate, convinced that for speed, comfort and economy there's nothing like flying . . . via Martin airliner! **THE GLENN L. MARTIN COMPANY, BALTIMORE 3, MARYLAND.**

FLY VIA MARTIN TRANSPORTS ON THESE GREAT AIRLINES

Pennsylvania-Central Airlines

Eastern Air Lines • Braniff Airways

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United Air Lines • Northwest Airlines

"So Soon?" Yes, with 5 miles slipping by each minute, it seems like no time at all before you're there. Martin airliners are 120 m.p.h. faster than today's medium-range transports, utilizing powerful Pratt & Whitney engines with jet exhaust thrust. You can really go places on a 2-weeks vacation, by Martin airliner!



Martin

AIRCRAFT

Builders of Dependable



Aircraft Since 1909

Famous natural "life lines"



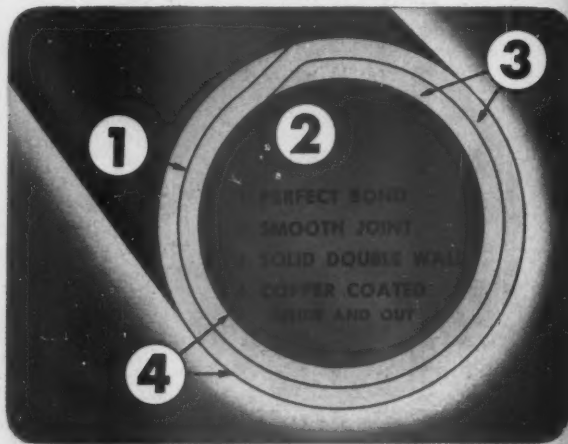
1. BAMBOO is classified as a tropical grass. Yet it is tree-like in appearance. Occasional specimens attain a height of one hundred feet or better, and a girth of three feet. Its tubular construction insures great strength. Tubular bamboo is really a "life line" for people who live in the jungle.



2. THE ELASTIC hard bamboo stems are used in bridges, houses and boats. Small sections are made into cooking utensils, pails, bows, arrows and fishing rods. Thin strips are fashioned into hats, screens and nets. With partitions removed, the larger tubes make dependable water pipes.



3. IN INDUSTRY—there is a special metal tubing with a host of uses. It is known as Bundyweld. This tubing serves as a "life line" for countless modern products. It carries essential oil—for example—to giant Diesel locomotives. Its dependability is due to its unusual construction.



4. BUNDYWELD is different from other forms of tubing because it has a solid, double steel wall, copper brazed throughout and copper coated inside and out. It is free from scale, closely held to dimensions, very easily fabricated. Engineers and product designers praise it for its wide adaptability.

5. MANY MODERN products rely on Bundyweld. It serves as the "life line" for cars, trucks and tractors—for gas ranges, refrigerators and air conditioning units. Let Bundy Research and Engineering Departments show you how Bundy Tubing can aid your product. Also available in Monel and nickel.

Bundy Tubing Co., Detroit 13, Michigan

BUNDY TUBING



BUNDY TUBING DISTRIBUTORS AND REPRESENTATIVES:

Pacific Metals Co., Ltd. 3100 19th St. San Francisco 10, Calif.	Standard Tube Sales Corp. 1 Admiral Ave. Maspeth, N.Y.C., N.Y.	Lapham-Hickey Co. 3333 W. 47th Place Chicago 32, Illinois	Rutan & Co. 112 S. 16th St. Phila. 2, Pa.	Eagle Metals Co. 3628 E. Marginal Way Seattle 4, Wash.	Alloy Metal Sales Ltd. 861 Bay St. Toronto 5, Canada
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FIGURES OF THE WEEK

	\$ Latest Week	Preceding Week	Month Ago	Year Ago	1911 Average
THE INDEX (see chart below).	*175.0	†172.7	154.1	219.1	162.2

PRODUCTION

Steel ingot operations (% of capacity).....	87.2	87.2	55.2	88.1	97.3
Production of automobiles and trucks.....	64,795	†54,475	31,895	19,115	98,236
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)....	\$22,582	\$23,145	\$21,566	\$7,759	\$19,433
Electric power output (million kilowatt-hours).....	#	4,129	3,741	4,353	3,130
Crude oil (daily average, 1,000 bbls.).....	#	4,950	4,756	4,903	3,842
Bituminous coal (daily average, 1,000 tons).....	1,979	†2,067	1,325	1,936	1,685

TRADE

Miscellaneous and L.C.L. carloadings (daily average, 1,000 cars).....	83	83	57	84	86
All other carloadings (daily average, 1,000 cars).....	60	62	38	63	52
Money in circulation (Wednesday series, millions).....	\$28,135	\$28,116	\$28,106	\$26,628	\$9,613
Department store sales (change from same week of preceding year).....	+35%	+37%	+34%	+21%	+17%
Business failures (Dun & Bradstreet, number).....	14	25	18	14	228

PRICES (Average for the week)

Spot commodity index (Moody's, Dec. 31, 1931=100).....	*301.0	287.0	282.7	256.3	198.1
Industrial raw materials (U. S. Bureau of Labor Statistics, Aug., 1939=100)...	*179.2	178.6	175.8	166.5	138.5
Domestic farm products (U. S. Bureau of Labor Statistics, Aug., 1939=100)...	#	255.3	252.2	227.0	146.6
†Finished steel composite (Steel, ton).....	\$64.45	\$64.45	\$63.54	\$58.27	\$56.73
†Scrap steel composite (Iron Age, ton).....	\$19.17	\$19.17	\$19.17	\$19.17	\$19.48
†Copper (electrolytic, Connecticut Valley, lb.).....	14.375¢	14.375¢	13.425¢	12.000¢	12.022¢
†Wheat (Kansas City, bu.).....	\$1.87	\$1.86	\$1.87	\$1.65	\$0.99
†Sugar (raw, delivered New York, lb.).....	4.20¢	4.20¢	4.20¢	3.75¢	3.38¢
Cotton (middling, ten designated markets, lb.).....	*31.26¢	29.60¢	28.12¢	22.48¢	13.94¢
†Wool tops (New York, lb.).....	#	\$1.330	\$1.330	\$1.330	\$1.281
†Rubber (ribbed smoked sheets, New York, lb.).....	22.50¢	22.50¢	22.50¢	22.50¢	22.16¢

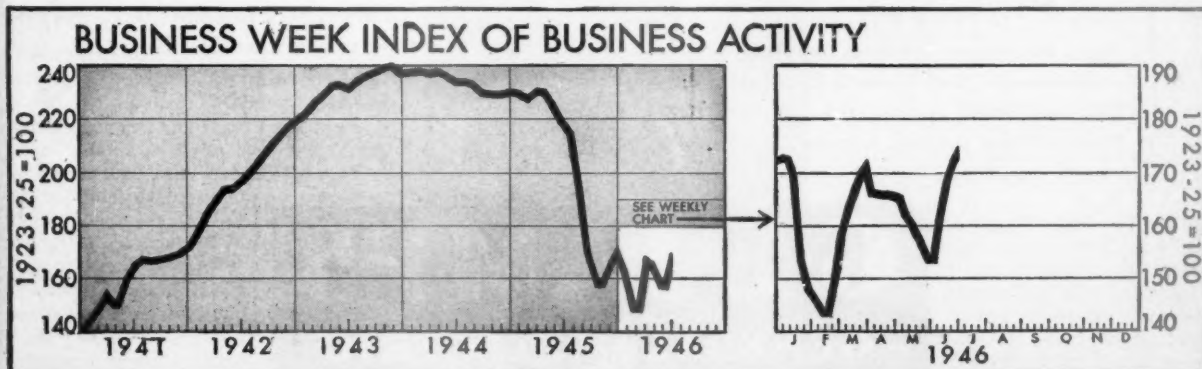
FINANCE

90 stocks, price index (Standard & Poor's Corp.).....	*146.7	144.5	150.9	119.0	78.0
Medium grade corporate bond yield (30 Baa issues, Moody's).....	3.03%	3.03%	3.03%	3.27%	4.33%
High grade corporate bond yield (30 Aaa issues, Moody's).....	2.48%	2.49%	2.51%	2.60%	2.77%
Call loans renewal rate, N. Y. Stock Exchange (daily average).....	1.00%	1.00%	1.00%	1.00%	1.00%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate).....	1%	1%	1%	1%	1-1%

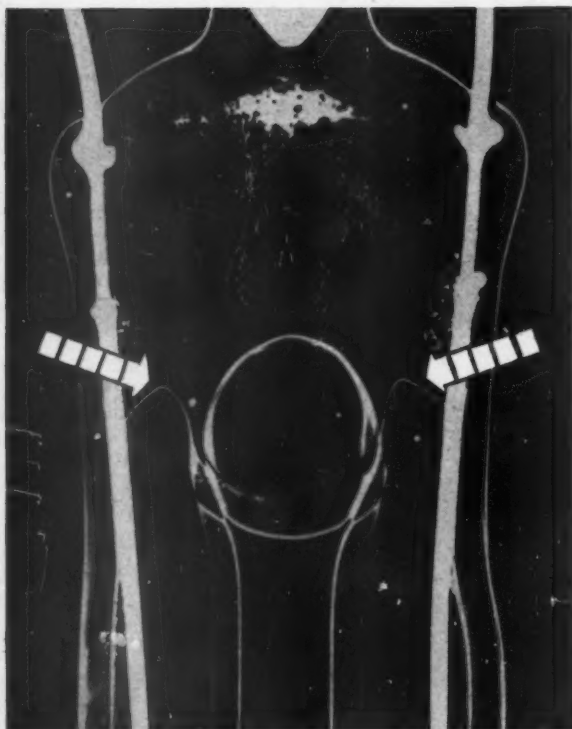
BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks.....	#	39,869	38,941	36,367	23,876
Total loans and investments, reporting member banks.....	#	62,505	63,887	63,537	28,191
Commercial and agricultural loans, reporting member banks.....	#	7,520	7,482	5,918	6,296
Securities loans, reporting member banks.....	#	4,033	4,280	5,317	940
U. S. gov't and gov't guaranteed obligations held, reporting member banks....	#	44,324	45,593	46,543	14,085
Other securities held, reporting member banks.....	#	3,378	3,390	3,159	3,710
Excess reserves, all member banks (Wednesday series).....	710	550	820	1,362	5,290
Total federal reserve credit outstanding (Wednesday series).....	23,904	23,454	23,556	22,211	2,265

* Preliminary. # Not available at press time. ‡ Ceiling fixed by government. † Revised. § Date for "Latest Week" on each series on request.




Two good ways to pick Fluorescent Lamps



1

You might start by becoming an expert on skiagraphy—"shadow-photo" technique of photographing transparent objects. General Electric uses skiagraphs like the one above to check on the structure of the glass stem of G-E fluorescent lamps. This one shows whether the lamp is properly sealed. And that's important. If those little contour lines, marked by arrows, weren't exactly the right shape, the lamp would be weakened and its life shortened. But skiagraphy is only one way to check fluorescent lamps. You'd have to master hundreds of other inspection methods too, and invest millions of dollars in the equipment to make the tests. But G-E has done all that for you. All you have to do is...

2

Insist on the  **Monogram** whenever you buy fluorescent lamps for office, home or store. G-E's 480 tests and inspections make dead certain that G-E fluorescent lamps will give you the most for your money...in light output and lamp life. *And G-E lamp research is constantly at work to make G-E Lamps ever better, and to make them Stay Brighter Longer.

G-E LAMPS

GENERAL  ELECTRIC

Price Free for All Starts Anew

Proponents of control are handicapped by complexities of shaping new bill. Time factor militates against Truman's program. Public may be influenced by way business uses present freedom.

The free-for-all battle over price control is on again, regardless of any interim action by the Congress which sustained President Truman's final decision to veto the new law that it gave him on the day before OPA died.

All participants in the original battle started the fresh one in their original positions. Whether any would shift depended on the outcry that the President might have raised by his veto broadcast. And the strength of the outcry depended heavily on how business uses its freedom from OPA price control.

• **At a Disadvantage**—First indications were that the battle was a dubious one for the proponents of price control. For one thing they start with a special disadvantage. What the President is now asking on their behalf is necessarily a rollback without subsidies. Even if it were willing, Congress could not crank out a new law to suit Truman in a few minutes' work. In the time interval there were bound to be some price rises. How to wipe them out makes a tough question (page 9).

What the President is demanding, at least at the start of the first round of the new battle, becomes clear from a study of his veto message.

• **Point by Point**—Truman wants:

(1) Extension of OPA to June 30, 1947.

(2) Continuation of subsidies of at least one-and-a-quarter billion dollars, to be applied mainly to food (as against the billion dollars provided by the vetoed bill).

(3) A flexible policy of decontrol which, however, would not permit any ceiling removals in the next six months if such removals meant price increases.

(4) No split of authority between OPA and the Dept. of Agriculture.

(5) Abolition of the Taft amendment in the vetoed bill, and substitution of a provision calling for price increases only "wherever this is necessary and would be effective to increase the total production of goods."

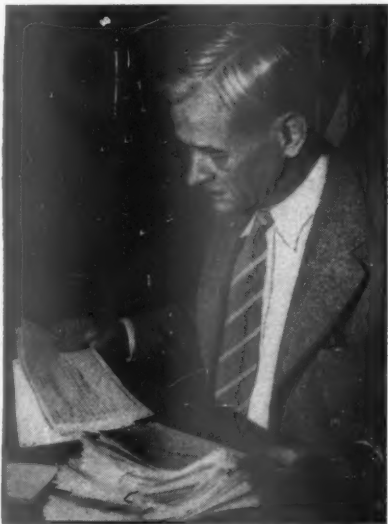
• **At the Crux of It**—The Taft amendment was the heart and soul of H. R. 6042. In effect it stipulated that every producer, manufacturer, and processor (including the farmer) should get the same profit—in dollars and cents—per

item as he did in a 1941 base period (usually Oct. 1-15, 1941).

OPA economists objected to this amendment on the grounds that it is "an accountants' nightmare." To understand the veto (apart from its political aspects—page 5) you must know that they persuaded Truman:

(1) That there is no way to determine unit cost increases since 1941. That industries customarily compute their costs on an over-all basis and that trying to split them down item by item distorts the picture. (For instance, OPA insists that the tire industry can prove mathematically that it has been losing money on a per-unit-basis for years, despite the fact that earnings statements show the major operators to be in the black.) That current costs are unduly high because many industries are not yet in full operation. And that the hundreds of thousands of price-increase applications calling for OPA action within 60 days under H. R. 6042 would swamp the agency.

(2) That the Taft amendment ("like the end of price control," they add) would wipe out many a small indus-



Fifty to one in favor of the President's veto action, thousands of telegrams—culled by press secretary Charles Ross (above)—were favorite White House reading matter last week end.

"Man vs. Atom"

This week the world is trying to see what new lesson was exploded in its face by history's fourth atom-bomb drop, at Bikini. Almost a year ago—July 16, 1945, at Alamogordo, New Mexico—man created the first atomic explosion.

The full lesson on Bikini must be read in the blinding light of all that this year of fear and hope has taught us about the fateful atom that can serve or destroy us.

As we face the atomic dilemma and the great debate unfolds, Business Week presents on pages 65-75 of this issue a McGraw-Hill report, "Man vs. Atom—Year I"; what we now know about this new force—its basic science, its possible uses, its political implications.

trialist. They argue that the increased cost of supplies—for which smaller firms must contend at any price with the big fellows—would eat up the reserves which they accumulated as a result of war contracts. When the price shakedown came, they would be in debt to the banks for high-priced inventory.

• **Time and Congress**—But this line of reasoning, spelled out at the White House on veto day, must now run the congressional gauntlet. And the more time spent on finding an acceptable substitute for the Taft amendment the greater the chances that Truman's five "must" points will fade. Further, the President won't be the only one looking for a chance to repair cracks in H. R. 6042. Congress on any second try is sure to realize that, in the rejected bill, it out-slicked several sectors of the economy.

• **Major Gaps**—For instance, by who knows what oversight, that bill made no genuine provisions for the relief of any service industry except the restaurants. This left a wide open opportunity for OPA to slap a stringent ceiling on building contractors at a time when everybody else was being eased out of a squeeze.

Similarly, Congress gave the cotton-wool textile mills a special pricing provision (parity or current material costs, whichever was higher, plus conversion costs, plus reasonable profit), probably less than the textile people would have received under the Taft amendment.

• **Headed for a Fall?**—Assuming that Congress may have to take care of such

discrepancies in addition to fiddling around again with manufacturer-farmer prices, it looks as though Truman's program is headed for a fall between numerous stools.

Rent control stands the surest chance of re-enactment. Sentiment is strong for this and legislation won't require the kind of compromises that turned H. R. 6042 into an administrative nightmare. Furthermore, the fact that so many rents are under annual leases minimizes the rollback problem growing out of increases during an interval of freedom from control.

Vanadium Corner

U. S. charges six producers and processors with plot to control ore resources and with misuse of pricing powers.

A federal grand jury sitting in Denver last week indicted major vanadium processors and producers for violation of the antitrust act, charging them with conspiracy to set prices and monopolize the U. S. supply of the important alloying metal. Flat denials were promptly made in company statements.

Although uranium is not mentioned, the charge implies that they also own 95% of uranium resources, since the same ores contain both minerals (BW—Aug. 18'45, p. 23).

• **Wartime Powers**—A feature of the indictment is the extraordinary use allegedly made by one defendant, U. S. Vanadium Corp., of its powers as a wartime agent (for purchase of vanadium ores) of the Metals Reserve Co., a subsidiary of the Reconstruction Finance Corp.

U. S. Van held these agent's powers from 1942 until the end of February, 1944. The indictment says the company used them to solidify complete monopoly (with Vanadium Corp. of America) in the important vanadium-uranium producing "four corners" country of New Mexico, Colorado, Utah, and Arizona. This region is virtually the only U. S. source of the associated minerals.

• **Two Prices Alleged**—Acting as MRC agent but without consulting MRC as to what it should pay for ore, according to the indictment, U. S. Van hiked prices in the neighborhood of small independent processing mills, thus outbidding them for ores and starving them out. Meanwhile, its mills and those of Van America were buying direct from miners at lower prices (less than the cost of operation of the mines, the indictment says), and U. S. Van as a government agent refused to pay near its own mills the prices it was paying as

a government agent near independent mills.

Thus the indictment charges, in effect, that, government funds were directly used to starve out small miners and processors and promote the monopoly. Firms indicted are Vanadium Corp. of America and the giant Union Carbide & Carbon Corp. with its four subsidiaries: U. S. Vanadium Corp., Electro Metallurgical Co., Electro Metallurgical Sales Corp., Electro Metallurgical Co. of Canada, Ltd.

• **Old Charge**—Not mentioned in the indictment is the charge made last fall by independent miners and mill operators in the area that U. S. Van and Van America refused to pay them for the uranium content of their ores, though knowing its value.

The indictment declares that two companies—Union Carbide & Carbon, through its subsidiaries, and Van America—now control 95% of commercially available U. S. vanadium ore deposits, 99% of all vanadium oxide, and 100% of all ferrovanadium.

The alleged conspiracy began in the early 30's, when, the indictment says, Van America had ceased to import ores from its great Minasranga mine in Peru because of a Peruvian export tax, plus

the cost of developing new extraction processes.

• **Competitive Aspects**—In 1933 Van America, which has continuously had between 60% and 70% of the U. S. market, was squeezed by a shortage of Peruvian ore. Instead of competing with Van America, the indictment says, U. S. Van sold it needed ferrovanadium under the market price; and Van America and Electromet Sales Corp., Carbon's sales agent for vanadium products, raised the price for vanadium to users.

U. S. Van bought the Metals Reserve mill in Colorado when the mill was closed down. It also sought to buy the stockpile there, but was unsuccessful. It later contracted to process this ore for a fee. Van America bought the Utah government-owned mill and its stockpile. The two companies have also bought up virtually every promising ore body or claim in the four states, but the indictment declares that they have refrained from bidding in competition.

The further charge is made that Electro Met of Canada used its position as agent for the Canadian Dept. of Munitions & Supplies to prevent others than the defendants from selling ferrovanadium and vanadium oxide for export to Canada.

MOBILE PHONES MOVE

The telephone book, painstaking commentary on life in our times, makes the mobile radio telephone official by listing it in the new Chicago edition (left). To call a vehicle equipped with Bell's mobile phone: Dial 211, ask for the mobile service operator. Over a private system, a truck driver (below left) of Chicago's Willett Co. puts in a test call to Vice-President Edward L. Willett, Jr. (below right), at the dispatcher's desk. Radiophones are familiar equipment to railroads and taxis but Raytheon Mfg. Co., New York, makers of the Willett unit, believes it is the first used by a major trucking concern.

**Numbers You May
Be in a Hurry**

SERVICE CALLS

Information (For numbers not in the directory) . . . Dial 411

Repair Service (To report telephone "out of order") . . . Dial 611

Business Office . . . Dial OFF 9100

Service Difficulties (When your number) . . . Dial "0" (OPERATOR)

Mobile Radiotelephone Service (For calls to subscriber automobiles and trucks in Chicago and vicinity) . . . Dial 211 (Ask for "Mobile Service Operator")

OUT-OF-TOWN CALLS

Station calls to points under 40 miles (see page 7) . . . Dial "0" (OPERATOR)

To more distant points . . . Dial 211

ILLINOIS BELL TELEPHONE CO.
Executive and General Offices: 212 W. Washington





THE WING TAKES WING

Eyes of the aviation world turned to California again last week as Northrop's Flying Wing XB-35 bomber left the ground on its 85-mile maiden flight of 44 minutes from Hawthorne to the Army's desert air base at Muroc. In its first flight, the 12,000-hp. tailless giant (weighing in

at 111,000 lb.) soared to 10,000 ft. It will undergo further rigorous flying tests to make good a claim that the type is more efficient than conventional planes. Northrop Aircraft believes the 172-ft. V-shaped wing will carry 25% more load—weight for weight and power for power—than a regular plane; fly 25% farther on the same amount of fuel; travel 20% faster—and cost less to build.

Pause for Inquiry

Mounting demands of philanthropic organizations cause executives to look into their management and expenditures.

Bickerings on the humanitarian front call attention to the fact that business and other groups are realistically examining their policies on philanthropic donations. With the war over, the urge to give till it hurts for patriotic causes has lost its validity. Moreover, repeal of the excess-profits tax alters the situation in which a corporation in the high brackets would countenance large gifts because the amount could be charged off before net profits were figured, thereby reducing greatly the actual outlay.

Realizing that their wartime generosity has sometimes been exploited by the unscrupulous, company executives, union officials, community chest leaders, and consultants on charities are asking questions. Is the soliciting organization efficient? Are its reserves too large, and does it gage its requests to the sum actually needed? Is the amount asked properly proportioned to the requirements of other organizations? To what extent should business and labor groups relieve the money-seeking group of the work of collecting?

• **Red Cross-Union Break**—Perhaps the most raucous quarrel was the one that upset the stately American Red Cross. This resulted from a long-standing dispute between old-guard elements of the Red Cross and the labor unions. In April, headquarters of the Red Cross announced the end by mutual agreement of the arrangement by which war

relief committees of the American Federation of Labor and the Congress of Industrial Organizations collected Red Cross donations from their members. The break followed sensational charges by Frank Kent and other newspaper columnists that the agreement was a device that enabled unions to exact a toll on the nation's liberality. The accusation caused such a rift in the Red Cross that the position of its chairman, Basil O'Connor, was seriously questioned.

O'Connor officially denied that the A.F.L. and C.I.O. were getting kickbacks from Red Cross funds, asserting that the unions were merely reimbursed for their expenses in making collections from their memberships. He announced that the labor groups had raised between \$30,000,000 and \$35,000,000 for the 1945 Red Cross fund and that their expenditures in collecting this sum had been only \$238,000, less than 1%. Professional solicitors who get a percentage of the funds they collect for charitable purposes sometimes take as much as 30%.

• **Counterblast**—More fireworks were set off by Mrs. Eugene Meyer, wife of the publisher of the Washington Post. Charging that conservatives within the Red Cross were trying to get rid of O'Connor because he was too friendly to labor, Mrs. Meyer identified the source of information on which the antilabor attacks had been based.

"That story was given to the press in that biased light by your respectable, supposedly honorable but very bitter and very obtuse old fuddy-duddy leaders who resent the fact that labor is gaining a foothold in the management of the Red Cross."

• **Corporate Charity**—War emotions had a large but undeterminable effect on the outpourings of business and individ-

uals. But the impetus of war taxation is measurable. It is estimated that a corporation in the high brackets of excess-profits taxes could make a charitable donation of \$1,000 during the war at a cost of only \$145 (thanks to charging off the \$1,000 as legitimate expense). Now, with the excess-profits tax repealed, it would cost the same company about \$620 to make a \$1,000 donation.

The National Industrial Conference Board published a study last year (Company Policies on Donations) that reveals some startling phases of corporation philanthropies. Only one of the 578 manufacturing concerns responding made no contribution to charity. The increasing importance of collections from this source is indicated by a comparison of corporate and noncorporate contributions to community chests. In the ten-year period of 1920-1929, corporations accounted for 22% of total community chest contributions. By 1941 the corporate share had risen to 27% and by 1944 to 33% of the total. The growing practice of assigning company personnel to collect from employees meant a corresponding relief of soliciting agencies from the work of the harvest.

• **Surfeit**—One company executive reported that over 400 requests for funds were received by his corporation during a nine-month period of 1944. (In many cases promoters of questionable drives take advantage of the fact that it is easier for a company to meet a plea for \$1 to \$5 than to investigate.) Another corporation official terms pressure from customers for pet charities or from local committees seeking to avoid person-to-person solicitation "a mild form of blackmail."

The Conference Board warns that the expanding efforts of charitable institu-



LESSONS FROM A FRIEND

American techniques draw them in at Grand Palais, Paris (left), where a reconstruction and housing exhibition—including a whole American town of prefabs (above)—opened June 18. Hard on the heels of the Exposition of Urbanism & Habitation, featuring latest U. S. equipment (BW—May 18 '46, p111), this display suggests anew that France is going the whole hog to utilize advanced U. S. methods in rebuilding war-devastated areas.

tions are "creating commitments for the future that will have to be met by contributions based on dollars that will not be cheapened by excess-profits taxes."

• **Critical Eye**—Businessmen are speculating not only on future demands but on past accumulations. They want to know how soliciting organizations justify continued campaigns for huge totals while their coffers hold millions which apparently are dormant. They do not question the motives of organizations that have honorable records. But business officials who are constantly being asked for alms feel they have a right to know whether the rule of reason is employed in setting financial goals.

The last annual report of the American Red Cross showed that after collecting \$216,000,000 and spending \$130,000,000 last year, the organization had a balance on June 30, 1945, of \$181,800,000. On top of that the Red Cross collected some \$113,000,000 this year. It can be argued that the organization may need this and more for its aid to servicemen and their families and for the numerous other forms of mercy that are its business.

• **How Much Is Enough?**—In 1945 the Red Cross earmarked \$10,000,000 for

civilian disaster relief. Its expenditures for this purpose were only \$3,200,000. This year it asked \$4,500,000 for disasters. An obvious answer to critics is, "Who can foresee the need and who can dare to say just how much is enough?"

Some organizations have great advantages over others in their campaigns for the dollar of the compassionate. The Red Cross, with a magnificent organization reaching into every corner of the country, is in a unique position. Also well organized are the National Tuberculosis Assn., with its annual sale of Christmas seals, and the National Foundation for Infantile Paralysis, which has a sure-fire device in the "march of dimes." Each of the last two organizations collects about \$15,000,000 a year from the American public.

• **Doubts**—It is charged that unbalanced management allows most of the tuberculosis funds to be spent in the states where the bulk of the money was raised but where the tuberculosis rate is lowest; that poor regions where the disease is most prevalent must struggle along with small appropriations.

Infantile paralysis has never struck more than 27,000 persons in a year. Yet the foundation continues to pile up

money, much of which it appears unable to employ. Logic is perhaps further violated by the entry into the field of the Sister Kenny Fund, also seeking money for infantile paralysis sufferers and assisted by the melting harmonies of Bing Crosby.

• **Disparity**—Compared to the \$15,000,000 raised annually by the infantile paralysis foundation for a total of 175,000 sufferers, the American Cancer Society can raise only \$4,000,000 for 500,000 cases under treatment; the American Diabetes Assn. collects \$30,000 for 660,000 cases; and donations for heart disease come to \$100,000 for 3,700,000 persons affected.

D. Paul Reed, executive director of the National Information Bureau, Inc., New York, estimates that America's philanthropic donations total a billion dollars a year. His nonprofit organization analyzes and advises on the merits of charitable organizations for the Community Chests & Councils, Inc., which has 500 local memberships. It also advises foundations, individuals, and companies, among them the New York Telephone Co., Standard Brands, American Can, Sears, Roebuck, General Electric, General Mills, and the Atlantic & Pacific grocery chain.

• **More Coordination**—General Foods is conducting a quiet campaign to induce various health agencies to integrate their drives and coordinate the allotment of funds. It echoes the advice given by the National Health Council in a report (Voluntary Health Agencies) financed by the Rockefeller Foundation.

Critics generally are hoping for a wider use of the community chest idea, with perhaps a final application on a statewide or national basis. The plan as applied to localities involves a combined drive in which all approved health and philanthropic organizations (with the usual exception of the Red Cross) pool their efforts and collections. Receipts are shared on a basis of comparative needs.

• **Warning**—Company executives are advised to consult their community organizations, chambers of commerce, or the National Information Bureau when in doubt about solicitations. They are cautioned against the current horde of collectors who ask small sums for obscure causes—often using the service veteran appeal. In many cases this is a pure racket, one which has defrauded indifferent donors out of millions.

It all adds up to the fact that the businessman is balking at intemperate demands made on his money and his time by competing solicitation. Theater owners, who have been much put upon, made a concerted move toward a remedy during a recent convention of the American Theaters Assn. They voted to restrict collections from patrons to a single drive yearly in which all philanthropic groups would be included.

APC Aim Is Speed

Pending legislation would permit immediate sale of alien property, set up procedure for settling U. S. creditors' claims.

Twenty-eight years after the end of World War I, the Alien Property Custodian still has several hundred thousand dollars worth of uncashed assets on his books remaining from property seized during that war. With some \$190,000,000 of nonliquid assets on his hands as a result of World War II operations, custodian James E. Markham is hoping he can do a quicker wind-up job this time.

• **Legislation Pending**—Part of his hopes rests on a bill reported out of the House Judiciary Committee this week with an outside chance of passage before Congress recesses. A key feature of this bill, which was introduced by Rep. Sumners of Texas, would permit immediate sale of considerable property now tied up in litigation. Another feature would set up a procedure for orderly settlement of claims of U. S. creditors against seized property.

At the beginning of the war, the custodian, acting under World War I legislation, took over all enemy-owned assets in this country, including a good many on which phony transfers to U. S. ownership had been made. In addition, he took possession of all property of nationals of enemy-occupied territory—both to protect the interests of the owner and to prevent enemy use of the assets.

• **An Unloading Job**—The result is that the custodian now handles more than \$250,000,000 of government property representing one of the oddest aggregations of stuff in all the queer property which the government now owns as a result of the war. It ranges all the way from a 97.98% voting control of the \$90 million General Aniline & Film Corp., through a 39% interest in a chop-suey business (since sold) to the copyright on the song Lili Marlene.

Occasionally, the custodian snaps up a new piece of property as a hitherto concealed German or Japanese interest comes to light, but the main job now is to unload. For this purpose, the APC's holdings fall into several classes.

• **Policy Established**—A White House executive order issued a year ago set up the rule that German and Japanese property will never be returned to its owners. This also applies to property whose owners actively collaborated with the enemy. Unless upset sometime by congressional action, this is the official policy. The object of the custodian, as to this type of property, which repre-

sents the overwhelming proportion of his holdings, is to convert the property into cash, pay off any debts owed by the original owners to U. S. citizens and eventually turn over the cash to the Treasury for such use as Congress may direct.

There are two legal obstacles in the way of this program. The old law under which the custodian operates forbids the sale of a property as long as litigation is pending over the validity of its seizure. On nearly all the enemy-owned property, someone either has brought suit claiming that it's not enemy-owned or has notified the custodian that suit will be brought if sale is started.

Under the existing law, also, creditors must be paid on a first come, first served basis, so that in many cases the property would be exhausted before all creditors were paid. The custodian has been hesitant to follow this procedure.

• **Solution Proposed**—The pending legislation would correct these two difficulties. Where suits have been brought by foreign nationals (including U. S. citizens living abroad) the custodian would be permitted to sell the property at any time and make a cash settlement if the suit later goes against him. This would release most of the properties, leaving encumbered only those claimed by U. S. nationals.

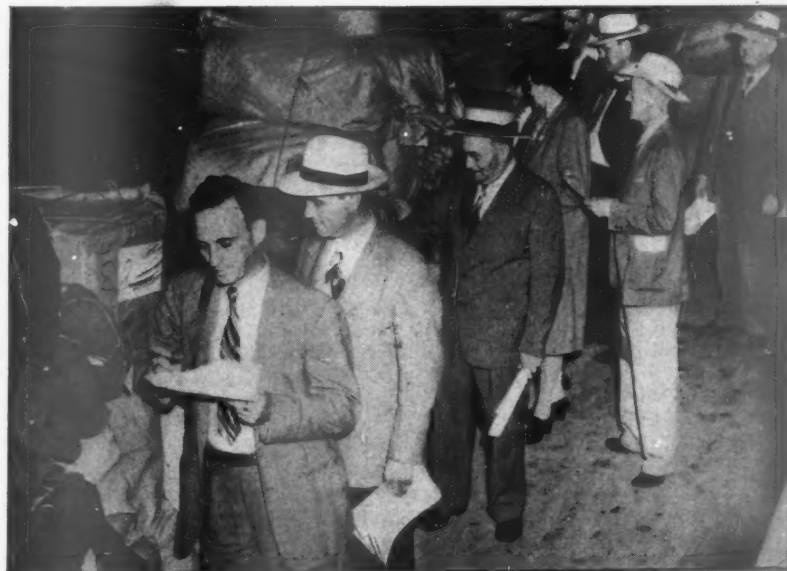
A second feature of the legislation would permit a bankruptcy-type settlement of debt claims. The custodian could assemble all claims against a property and pay them off, pro rata, up to the value of the property.

• **No Decision on Italy**—Alien property which was seized merely because its owners were in occupied territory is being returned to the original owners. Legislation approved early in March permitted the custodian to start turning this stuff back, and it is therefore not being offered for sale.

There's still no decision as to the eventual disposition of Italian and Austrian property. It will very likely be treated like assets owned in occupied territory, so, pending a decision, the custodian is not liquidating it.

• **Many Going Concerns**—The great bulk of the properties owned by the custodian is business enterprises. At one time or another, the custodian has owned a controlling or substantial interest in 411 firms with assets of about \$375 million. Most of them weren't thought worth continuing and have been or are being liquidated. These included export firms set up to deal with enemy countries, holding companies, and the like.

A total of 118 firms have been maintained as going concerns. Of the more than \$240 million of assets of these



THEY KNEW WHAT THEY WANTED

In the St. Joseph subdepot of the Kansas City office of War Assets Administration, buyers go prospecting for bargains. When 1,200,000 lb. of used military clothing and 50,000 blankets went on sale, most customers snapped them up in baled lots, sight unseen, cleaned out the place to the tune of \$142,564. As a spur to surplus disposals, WAA will initiate a new series of on-the-site sales at the end of this month, starting in Leavenworth, Kans. Meanwhile, the House Appropriations Committee reports that on \$15,400,000,000 worth of surplus in the coming fiscal year, Uncle Sam expects to realize \$2,900,000,000.



PREVIEW: BUS LINES IN THE SKY

Rising from a bus "transfer" point on Willow Run Expressway near Detroit, a Greyhound Skyways helicopter lends substance to Greyhound's plans for the future. The Sikorsky ship is one of two purchased at \$48,500 each by the bus line's air-minded subsidiary, now experimenting with the use of buses as feeders for 'copters flying 25 to 100-mi. hops between major cities. It anticipates 12-passenger ships when it's ready to begin service a few years hence.

firms, nearly two-thirds are held by seven concerns. Biggest is General Aniline with its subsidiaries. American Bosch Corp. ranks next, closely followed by American Potash & Chemical Corp.

General Dyestuff Corp., which wholesales General Aniline products, is another big one, as is the pharmaceutical manufacturer, Schering Corp. Harvard Brewing Co. is one of the largest beer producers in New England. Carl Zeiss, Inc., was originally a sales and service outlet but went into manufacturing during the war.

• **Few Large Sales**—Three of these going concerns have been turned back to their owners and 27 have been sold, but only two of these are of importance. Last year, General Aniline's 50% interest in Winthrop Chemical was sold to Sterling Drug—subject to a ten-year trust designed to prevent its falling again into German hands (as it did after it was seized in the first World War).

This spring the custodian sold his 90% interest in American Potash to a syndicate of brokers which is offering the shares to the public. Next in line for sale probably is General Aniline. Wall Street has heard that APC's interest in that company will go on the auction block this fall. Rumored to be interested in acquiring this control is Remington-Rand, Inc.

Geneva Gets Set

Now the question is how soon Big Steel's Utah plant can fill the orders that are rolling in. Officials busy on answer.

Western industrial interests are jubilant over the sale of the big Geneva steel plant to United States Steel Corp. (BW—Jun.22'46,p15), for they now feel assured of a western steel supply commensurate with their needs and anticipated growth, and they know that they can count on Geneva's being aggressively operated. Big Steel, they reason, doesn't sink \$47,500,000 in a project unless it intends to do a worthwhile production and merchandising job. And it is committed to establish Geneva as a basing point, which will mean cheaper steel, particularly in the mountain area.

• **Finding the Answer**—Through the West one question now pervades all thinking of steel users: When can we get the type of steel we need for our particular operations?

In Pittsburgh this week three men who eventually can give the answer to that question are meeting, and the meeting is essentially to work out that answer. Geneva, which is 40 mi. south

of Salt Lake City, wasn't built to supply peacetime steel requirements; it was built to furnish the ship plates, the heavy structural shapes, the shell steel needed for war.

So Benjamin F. Fairless, president of U. S. Steel, Dr. Walther Matthesius, president of Geneva Steel Co., and William A. Ross, head of Columbia Steel Co., Big Steel's western subsidiary and direct owner of Geneva, are working out the program for transforming Geneva from a war to a peace basis.

• **What Geneva Is**—To understand their problem requires an understanding of what Geneva has now. Its three blast furnaces have an annual capacity of 1,150,000 tons of pig iron; its nine openhearth furnaces can transform this pig, with the addition of scrap, into 1,283,400 tons of steel ingots. But its rolling facilities are designed to turn out only heavy structural shapes (250,000 tons) and plate (700,000) in the main.

Thanks to the foresight of the U. S. Steel men who planned and built it, Geneva is laid out so the finishing facilities for peacetime operations can be added with a minimum of difficulty.

So, if its new owner desires, Geneva could be readily expanded, to turn out sheet and strip, tinplate and terneplate, rods and bars—everything a steel-hungry western industrial empire needs.

• **Millions for Expansion**—Actually, however, what the West wants most is steel—basic steel. It has—or will have when other steel plant expansions in the West are realized—most of the facilities to turn that steel into the products it wants, semifinished and finished.

The \$18,600,000 that Big Steel is committed to spend on Geneva under its purchase agreement, therefore, will go initially into facilities for producing hot rolled coils, which Columbia then will roll into sheet and tinplate at its planned-for \$25,000,000 mill at Pittsburgh, Calif. (BW—Dec.8'45,p22). This will consume some 385,000 tons of the Utah plant's capacity; other diversified shapes will raise total output to 660,000 tons a year.

• **Big Backlog of Orders**—Geneva's re-conversion may take anywhere from 14 months to three years, depending on ability to obtain needed machinery and materials, also on whether the plant is closed down for the conversion or put in partial operation.

Already orders are reported to be rolling in. U. S. Steel is said to have enough western business now to keep Geneva operating for a year.

Operated by U. S. Steel for the government without charge, Geneva in the two years from the time its coke ovens were first charged turned out 1,148,623 tons of ingots, from which were made 634,010 tons of plates, 71,313 tons of structural shapes, and 63,393 tons of billets.

Stockpiles O.K.'d

Congress gives control of strategic materials to military, but retains right to approve disposal of any surpluses.

The Army and Navy have won the last round in the fight for control of postwar stockpiles of strategic materials, and legislation is expected to go to the White House shortly.

• **Long Controversy**—The bill, designed to preclude the possibility of a shortage of critical materials at the outbreak of another war, as was the case at the start of the last one, has been the center of considerable controversy. The measure, as introduced in the Senate last fall, gave control over the stockpiles to a board dominated by civilians to be appointed by the President.

Rewriting the Senate bill, the House vested control in the hands of the Secretaries of War and Navy, assisted by the Secretary of Interior, and the House stand prevailed in the conference committee. The stockpiles will be managed by the Secretaries of War, Navy, and Interior through the Army & Navy Munitions Board, with the assistance of the Secretaries of State, Treasury, Agriculture, and Commerce and industrial advisory committees appointed by the military.

• **Orderly Purchases**—The House wrote into the Senate bill appropriations ceilings totaling \$1,800,000,000, to be spent in \$360 million instalments during a five-year period. The conference committee eliminated money matters from the bill and put the appropriations up to congressional action as funds for purchases are needed.

"Buy American" provisions, contained in the original 1939 act establishing wartime stockpiles, are retained. The Treasury Procurement Division will make the purchases "as far as is practicable, from supplies in excess of industrial demand." This program is intended to provide an orderly purchase plan, designed to acquire materials at reasonable cost and with minimum interference to the normal operations of producers and consumers.

Whatever strategic materials are purchased from foreign sources for stockpiling probably will be assessed with the customary custom levies and taxes, but in any case such imported materials as are declared surplus and diverted into the domestic market will be sold at prices which include duties and taxes.

• **Control of Congress**—One clause of the bill provides for the release of surplus government stocks to industry "to extent required to meet current de-

ficiencies in supply." During the present period of shortages of critical metals, this practice of making surpluses available to industry has been carried on by Civilian Production Administration to a considerable extent.

Disposal of materials which are no longer needed by the military has been put under control of Congress by the bill. A full report must be sent to the Military Affairs committees of both houses on any proposed disposition and, except in cases where a revised determination is based on obsolescence of the particular materials for use in time of war, no stockpile materials may be disposed of without the express approval of Congress. No such provision was contained in the 1939 act.

• **Semiannual Reports**—The House Military Affairs Committee, in its report on the bill, pointed out that "the existence of discretionary authority to release stockpile materials—except for war purposes, for rotation to prevent deterioration, or by reason of obsolescence—would present a grave threat to the stability of mining operations and the confidence necessary to maintain a sound and healthy domestic mining industry. It would thus imperil our major sources of many of these materials. The provisions under which Congress retains the key to the stockpiles are designed to minimize this threat."

Reports to Congress every six months are to be made by the Secretaries of War and Navy, detailing the stockpiling activities, including information on foreign and domestic purchases.

Soil in Danger

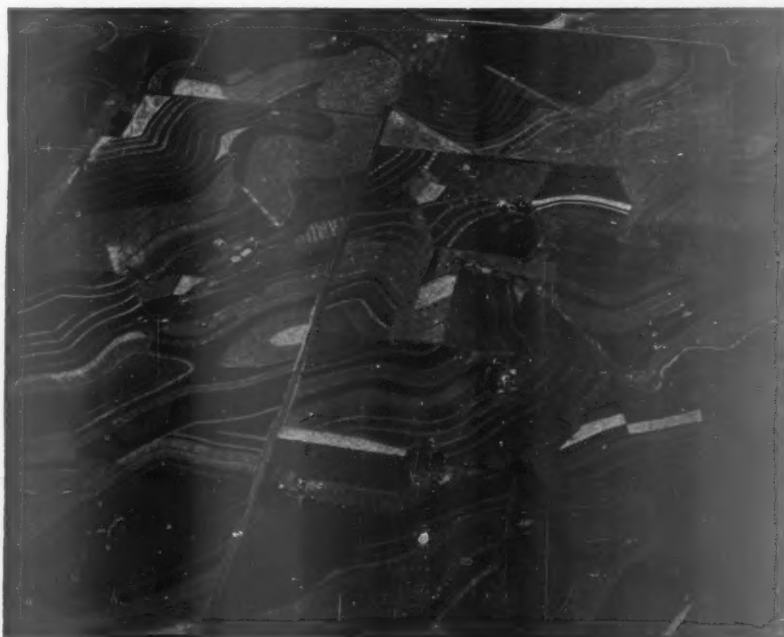
Despite big conservation program, plowing of grass lands may return millions of acres to ravages of the dust bowl.

When the great American dust bowl of the thirties blew a monstrous black cloud into the sky, soil conservation became a national program. It was none too soon. By 1930 erosion had ruined 100 million acres of good cropland; another 100 million had been damaged. Of the 460 million acres remaining, a third 100 million is eroding too fast.

• **Climax After First War**—This stupendous waste was the result of extravagant land use which reached its climax following the first World War when the world's hunger prompted U. S. farmers to plow up 11 million acres of natural grass land to plant crops. Marginal lands plowed up brought the total to 30 million acres.

The dust bowl was part of the price. Introduction of soil conservation measures repaired much of the damage in that and other areas within five years, but the onset of World War II brought back the hazard.

• **Danger Continues**—Estimates of how much land has been plowed up because farmers want to cash in on high food prices at the risk of lifting the lid from their unstable land indicate that only 4,000,000 acres again are in jeopardy—



Following the contours of the land, not the fences, six Ball County (Tex.) farmers have united in a contour-plowing soil-conservation project (above)—which, they are learning, works best when it doesn't stop at boundaries.

SOIL CONSERVATION TAKES HOLD



Every one of the 48 states now has legislation for soil conservation in cooperation with the federal Soil Conservation Service. Such legislation is permissive in nature, providing for the formation of local soil conservation districts. Up to Dec. 15, 1945, when the map (above) was prepared by the SCS, 1,440 such districts had been formed. Since then, 81 more have been added.

a seventh as much as after World War I. But the current demand for wheat, and for beef, heightened by animal feed shortages, may combine to cause still more plowing and intensive grazing that destroys the protecting buffalo grass.

In southeastern Colorado, portents of disaster—magnified by a dry spring season—are worrying the Dept. of Agriculture, which isn't pleased with that state's conservation laws. A wet early summer elsewhere has somewhat allayed its fears, but the threat has enlisted new backers for soil conservation. Industry, organized business, banks, railroads, and national church groups have joined the department in treating the land as the basis of prosperity.

• **Three Factions**—Government management of the extensive conservation program has its seamy side. A battle to dominate it has long been under way in the Dept. of Agriculture where three factions are at work on somewhat overlapping projects.

In the government reorganization plan recently submitted to Congress, President Truman neatly overlooked the strife among the Agricultural Extension Service (dominated by Edward A. O'Neal's mighty Farm Bureau Federation and many state farm colleges), the U. S. Forest Service (which likes to dispense a big budget, too), and the Soil Conservation Service (backed by the Farmers Union, the National Grange, and a number of state farm bureaus).

Congress, despite its respect for Ed O'Neal's votes and other autocrats like Mickey McDowell, Pennsylvania polit-

ico, is apparently backing the SCS. Its 1946-47 budget of \$29,754,000 was raised \$1,000,000 by the House and \$2,000,000 more was added by the Senate.

• **What It Means**—Soil conservation includes contour plowing, terracing, crop rotation, use of fertilizers, legumes, grass, shrubs, trees, irrigation, drainage, and any other tool that is needed. SCS applies these remedies by its service for farmers voluntarily organized in districts under state laws approved in all states. As of Apr. 15, SCS had 1,521 districts covering 831,000,000 acres or almost 4,000,000 farms.

A conservation plan, however, doesn't mean that the work has been completed, or even begun. In some projects, like contour plowing, a field can be finished in a day. Others take five years. Last year SCS claimed its farmers had treated 13,012,000 acres compared with 8,000,000 in 1942.

• **Obvious Interest**—A railroad's reason for backing soil conservation is easy to understand; it carries crops to market and merchandise to people who can buy. Similarly, a banker's interest in his territory is obvious. Steelmakers want to sell to auto and farm machinery manufacturers who sell to farmers. And the government hopes never again to see an entire area on federal relief, as was the Dust Bowl once.

Now churches are realizing their stewardship. The Methodists are establishing a new type of minister, a rurally trained man for whom the church buys a farm and expects him to earn half his

salary. The Church of Latter Day Saints (Mormons) has long been active in progressive farming. Baptists are also strongly conservationist.

• **Plenty of Work**—H. H. Bennett, chief of the Soil Conservation Service, is glad for these signs of unity in an undertaking where strife has caused confusion. There's enough work to be done to keep everybody busy for 20 to 25 years just carrying out present needs, he says.

Resurrected Tube

Manufacturers propose to use Cincinnati's subway, never used and now sealed, to bring rail service to basements.

If eleven manufacturers have their way, Cincinnati will find a use for its subway, an underground thoroughfare through which no vehicle has ever run to any practical purpose.

The manufacturers have formed the Parkway Industrial Railroad Co. They propose to lease the subway from the city, to provide themselves with sidings, and to bring rail service via tunnel extensions to their own basements.

• **An Old Canal Bed**—The subway in question lies in what used to be the bed of the historic Miami & Erie Canal, which in the last century played an important part in the city's growth, linking the Ohio River and Lake Erie. In Cincinnati, the canal was the figurative "Rhine" which skirted the city's Over-the-Rhine district, famed for its beer gardens and old world cafes.

After the canal had outlived its usefulness, it was surmounted by a highway, the present Central Parkway. In connection with the highway, which was completed in the early 1920's, the city projected the subway, which was to provide rapid transit service to northern and eastern suburbs.

• **Two-Mile Tunnel**—The big argument for the subway was that it was ready-made, that most of the digging had already been done by the pick and shovel battalions who made the canal. Nonetheless, a \$6,000,000 bond issue, passed in 1916, went into the work of converting the ex-channel into a two-mile tunnel.

Since then, subway has been no term to conjure with in Cincinnati, unless one wanted to conjure up derision and political controversy. Today the subway's above-ground platforms are sagging slabs of concrete in patches of weeds. The tunnel itself, a haven for bootleggers in prohibition times, is now sealed up.

• **Council Is Willing**—The manufacturers' railway plan requires court approval. The city council, willing enough, has

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authorized the city manager to advertise for bids on the tunnel lease.

If the deal goes through, the tunnel will be connected with a spur of the Baltimore & Ohio R.R. The Parkway Industrial Railroad Co. will lease rolling stock (of a size to fit the tunnel) and operate diesel or electric locomotives over the tracks it lays.

Supplies and materials, it is hoped, will come direct from point of origin without reloading, while outgoing products will go direct from plant to consignee.

• **Brewers Would Use It**—Participating companies will contribute in proportion to their use of the facilities. Biggest users would be brewers: Red Top Brewing Co., Schoenling Brewing & Ice Co., and Burger Brewing Co.

Other potential users are: MacGregor Goldsmith, Inc. (sporting goods), Joseph Oker & Sons (coopers), Haffner Bros. (tanners), Queen City Railroad Construction Co., Edward Fey Wine Co., French Bauer, Inc. (dairy products), and Gibson Wine Co.

Film Comeback

American motion pictures are showing again in foreign theaters, but producers have to fight nationalization trend.

American motion pictures are fighting their way back into foreign theaters, but the way is beset with many an obstacle.

Enterprising negotiators have beaten down barriers in most countries, and even where exhibition of any kind was only a faint hope a few months ago, U. S. producers are now showing their wares.

• **French Agreement**—The trend toward state control and nationalization of the film industries of Europe has not been arrested, but American companies have figured ways of doing business even where the government runs the shows.

The latest official agreement (there

are some others sealed but unsigned) allows the Big Eight producers that form the Motion Picture Export Assn. to exhibit as many as 124 dubbed features in France during the year which began July 1. This is an improvement on the conditions expected only six months ago (BW—Dec. 29 '45, p109), and was arranged in the shadow of the French negotiations for \$1,400,000,000 credit in the U. S.

• **Dispute Clears Up**—The stalemate in Denmark (over percentage of gross take going to U. S. producers and questions of fund transfer) is reported resolved.

In Czechoslovakia, six months ago, the door seemed nearly closed to American films. An agreement had been signed between the nationalized film industry and the Soviets to give 60% of theater showing time to Russian films and allow 100 pictures in 1946.

Since then, it has become evident that Soviet films are not available in sufficient number to fill this quota, and deals have been made to bring in U. S. pictures. First break was an agreement to show 65 American documentaries offered by the State Dept., with the national monopoly acting as distributor. Now, Hollywood producers are going to receive theater time on the basis of an interim agreement, and Czech negotiators are expected in New York soon for final talks.

• **Russia Offers Flat Fee**—The situation in the Balkans is far from clear, but it has improved beyond most expectations. Five of the Big Eight (Paramount, Metro-Goldwyn-Mayer, Universal, 20th Century Fox, and Warner Bros.) are in Hungary, operating without a formal agreement. Warner Bros. is handling distribution of American pictures in Rumania, and M-G-M is distributor in Bulgaria. In Rumania and Bulgaria, the post-liberation "package" of 40 U. S. films (released in all liberated areas) is being distributed and entry of additional films is expected soon.

Yugoslavia's state film monopoly wants to buy pictures outright (a la U.S.S.R.), but American distributors have not capitulated. The prospects are dim in Poland, for similar reasons. The Soviet Union, which paid flat sums for pictures before the war, has offered a top price of \$18,000 for U. S. films. So far Hollywood has resisted this unflattering fee.

• **Funds in Japan**—The outlook in enemy countries is varied. The Motion Picture Export Assn. has just arranged for the exhibition of 60 dubbed features approved by the State and War departments in the theaters of Japan and Korea. Income earned by the association (about \$200,000 a month) accumulates in Japan pending decision on transfer of funds.

In Germany, where U. S. films have



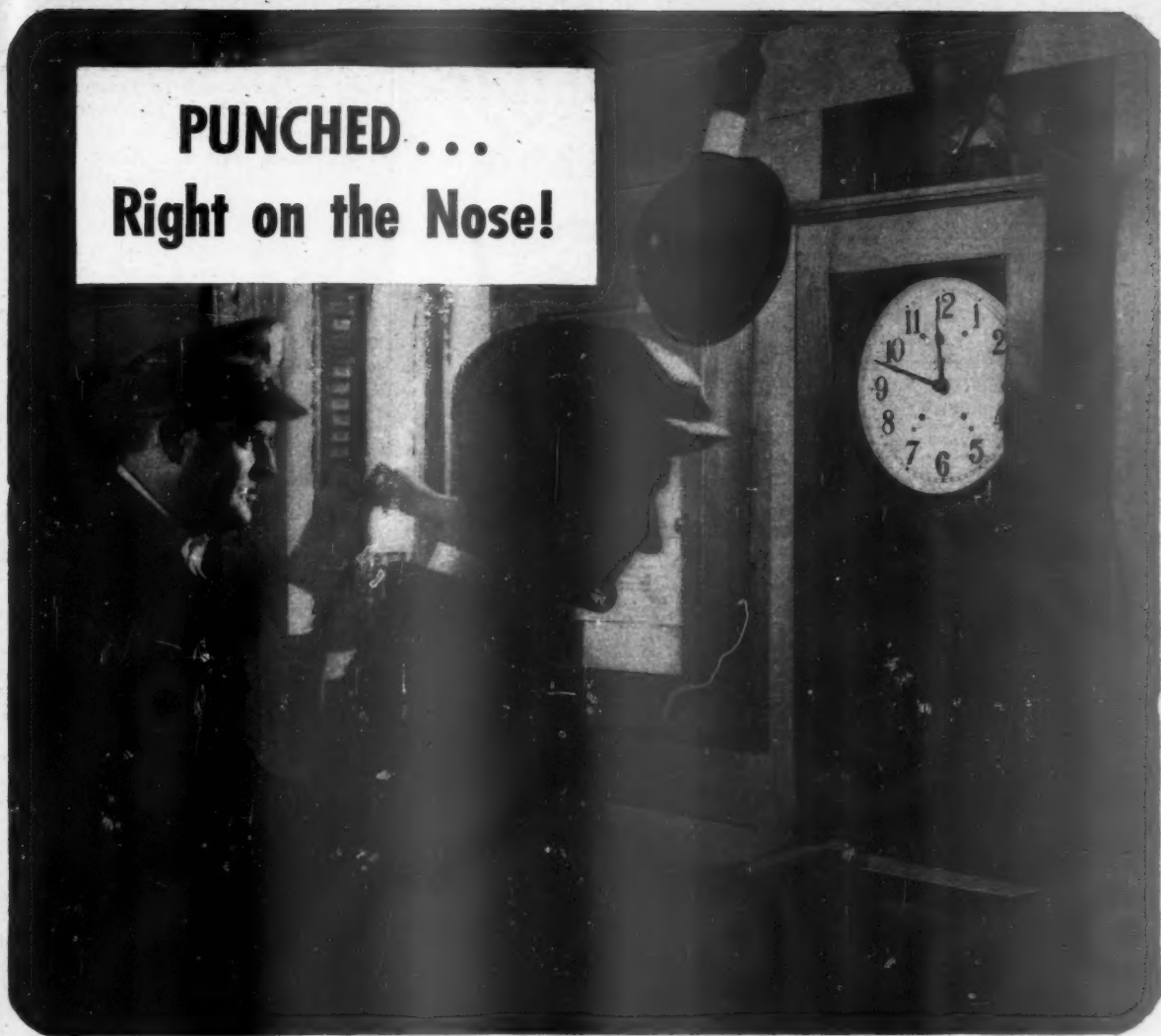
SMOKE AND IRE

Another set of New York commuters, this time 35,000 Staten Islanders, got it in the neck last week when their end of the "longest ferry ride in the world for a nickel" went up in smoke. Those nickels, red hot, were about the only salvage (right). Plans for a new \$12,000,000 terminal had just been submitted when the \$2,000,000 blaze occurred. But commuters, concerned with the present, spent hours and many times that nickel to get home over torturous detours, and back to work. Instituted quickly, emergency ferry service was inadequate



and inconvenient at best, and man-hours lost by lateness mounted.

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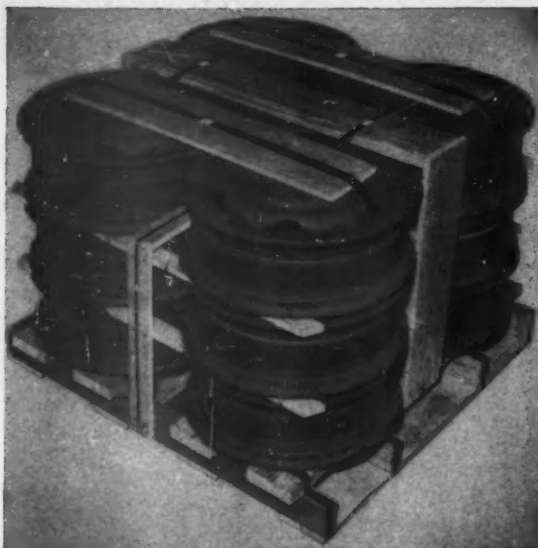
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been limited to official packages, the association is trying to negotiate more favorable terms.

This month the distribution of pictures in Austria will be removed from military jurisdiction. The export association will henceforth be in a position to negotiate with the Allied Control Commission for exhibition of American pictures and the terms of payment.

• **Coming to Terms**—The Netherlands, where the Bioscope Bond bosses distribution, has been a tough market to crack. Within a very short time, however, an agreement will be announced on terms that are considered favorable to the American industry.

Out for Airports?

Airlines urge developing of nonaviation concessions as means of keeping rising costs from being passed to public.

At the Washington National Airport, 26% of the total 1945 revenues came from spectator ramps and other non-aviation concessions, and only 7½% from landing fees.

With all the major airports now operating in the red, the Washington report suggests an answer to the problem of who is going to pay the \$200,000,000 annual bill for operating the nation's terminals when they reach an investment of \$2,000,000,000, as they will in a few years.

• **Cities Are Restive**—The cities that have been footing the deficits are growing restive. They know that with bigger aircraft to be accommodated, and with increasing airline patronage, bigger fields will have to be built and existing fields will have to be enlarged. Municipal officials, therefore, are expressing determination that the airports must pay their own way, and are looking to the airlines to foot a bill that could reach \$125,000,000 annually, or more than 60% of the cost of airport operation.

The airlines, however, are determined to resist any drastic increase in landing fees. They do not feel that the higher cost of airport operation can be passed on to the public, through higher fares, without impairing their competitive position with respect to railroads and other carriers.

• **Accent on Concessions**—That is why the airlines are now stressing concessions and recreational activities at airports as means of spreading expenses over a broad base. Considerable thinking is being directed toward formation of cooperative air terminals similar to the railroad's terminal corporations.

The function of such a corporation

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would be to manage the terminal facilities, to seek nonaviation concessions, and to develop, ultimately, shopping and recreational centers around the port. Management and maintenance of the landing field areas would be left to the municipality.

• **Operating Costs**—Such a program for reducing the red ink on airport ledgers is admittedly long range. For the present, attention is focused on cutting operating costs. This week the Air Transport Assn. published a study of ground costs at five selected cities which indicated that a million dollars might be saved annually in Chicago, Detroit, Peoria, Denver, and Memphis by avoiding duplication of activities of individual airlines.

The limiting factor in reduction of ground personnel, of course, is peak load period at a given airport. The ground force must be adequate to meet requirements imposed by the busiest period in transfer of passengers and cargo.

• **Basic Problem**—When it comes to building or rebuilding airports, one basic problem is determining the proper ratio of field space to building space. Since technological improvements will increase the number of landings per hour at all large airports, building space will be overtaxed at many terminals. Evidence of growing concern over this is provided by a book, published this week, by Charles Froesch and Walter Prokosch of Eastern Air Lines.

A measurement of the airport problem is afforded by the fact that New York's Idlewild Airport is being built at a cost of \$200,000,000 whereas the asset value of all scheduled domestic airlines in the United States last year only totaled \$213,000,000.

• **Expected Income**—The Idlewild Airport is expected to produce income of \$3,005,300 in the fiscal year 1949-50 and \$4,356,100 in 1954-55. The 1949-50 figure is based on these estimates: schedule fees from airlines, \$462,700; ground transportation of passengers at 10¢ each, \$277,600; observation platform receipts, \$100,000; rental of hangar sites, \$150,000; rental of arcade areas, \$855,000; rental of terminal buildings, \$625,000; parking lot, \$100,000; taxicab fees, \$10,000; other concessions, \$50,000; fuel vending privilege, \$375,000.

Landing fees at Idlewild will be patterned after those at La Guardia Field except that they will be 23% higher, in case the federal government contributes \$25,000,000 or more to the airport.

• **Sliding Scale**—If no federal funds were forthcoming, an additional boost of 50% would be clamped on. If the United States contributes less than \$25,000,000, landing fees will be adjusted according to a sliding scale.

While facing these increases in landing fees, the airlines have also to re-

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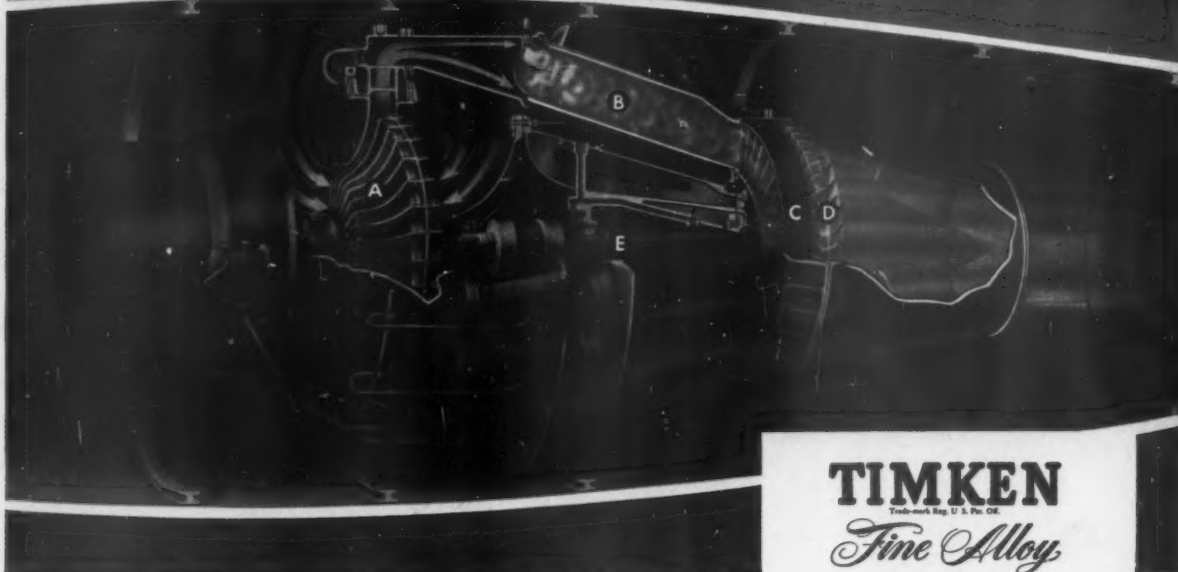
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Since the first use of steam, 170 years ago, succeeding generations of engineers have known that the magic short cut to power was a turbine to directly utilize the hot gases of combustion.

But always the insoluble problem was metal—a super-alloy for the rotor of the turbine which had to spin madly at a speed in an inferno of heat and pressure that no steel had ever before withstood.

Then early in World War II, metallurgists of the Timken Company developed an amazing new steel, designated "16-25-6," which made possible the practical use of the AAF's turbosupercharger. Engineers wondered—would it be the answer to jet propulsion too? *It was!* Today

an airplane that rips the sky faster than the speed of sound no longer is a wild dream.

Thus 16-25-6, the most important development in alloy steel to come out of the war, has made possible the war's most significant development in aviation.

Important advances in alloy steel logically come from a laboratory which devotes all its time and facilities to making better alloy steels. It could be well worth while to have the Timken Technical Staff suggest better alloy steels for you or better ways to use them in your product. Write Steel and Tube Division, The Timken Roller Bearing Company, Canton 6, Ohio. *Timken Bearings, Timken Alloy Steels and Seamless Tubes, Timken Removable Rock Bits.*

ABC OF A JET ENGINE. Air enters the centrifugal compressor (A) and is forced to combustion chambers (B) where fuel is burned. Air and gases at high temperature, feed through diffuser vanes (C) driving the turbine wheel of 16-25-6 (D) and shaft (E) carrying the compressor. Hot gas exhaust (far right) is the jet which thrusts the plane forward.

In operation, hot expanding gases at 1700 degrees F. blast against the blades of the turbine wheel. Rim of the wheel reaches a red heat of 1200 degrees F. while spinning madly at 11000 R.P.M.

Besides ability to absorb this destructive punishment, 16-25-6 has excellent weldability, good machinability and high resistance to scale and corrosion—all vital qualities in the success of the turbojet engine.

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fleet on the cost of heavier planes. An additional monthly charge is to be made at Idlewild for each 1,000 lb. in excess of the standard gross weight of 32,000 lb. Douglas DC-4's weigh in at 71,300 lb.; Lockheed Constellations at 86,250; Republic Rainbows at 113,250; Boeing Stratocruisers at 130,000. With others weighing as much as 320,000 lb. on the horizon, landing fees obviously are on the way up.

• **Cleveland Hikes Rates**—Cleveland, operating its airport with a deficit for years, has recently developed a new schedule of landing charges, patterned somewhat after those of New York (except that no charge is made for private business or personal planes). Resumption of the National Air Races at Cleveland in September is counted on to boost airport revenues substantially. The city has elaborate plans for expanding present facilities and building others.

Indicative of the outlays that must be made to meet aviation's burgeoning requirements is Chicago's investing of more than \$40,000,000 in Douglas field. That airport will be 208 acres larger than Idlewild. The goal at both Douglas and Idlewild is an ultimate capacity of 360 scheduled landings an hour (compared with La Guardia's peak of 42).

• **Self-Sufficiency?**—Both Idlewild and Douglas, being farther from the urban center than existing airports are, present excellent opportunities for development of the economic self-sufficiency that is projected as a solution of the cost problem.

La Guardia Field has made considerable progress in developing concessions. In addition to its restaurants, operated by the Hotel New Yorker, it boasts a paying men's furnishing shop operated by D'Andrea Bros., who are primarily merchant tailors. Although clothing has not been sold at the airport shop, it is displayed at La Guardia and its sale will be tried at Idlewild. Less fortunate is the miniature jewelry showcase operated at La Guardia by Cartier. It doesn't pay, but it has sufficient advertising value to justify its continuance.

• **As Managers See It**—Far-sighted airport managers have their eyes on such projects as the movie theater at Grand Central Terminal, bowling alleys, and other recreational concessions. They argue that, since more than half of the country's airports are more than a half hour from their cities' shopping centers, prospects for the development of self-sufficient communities are good.

In view of the growing number of airport employees, and the rise of new homes in airport neighborhoods, there is every indication that the big fields will develop into secondary communities as they move farther away from urban business centers.

Far Northern Oil

Intensive work is getting under way in field described in Navy report as most promising of its kind in this hemisphere.

North of the Arctic Circle, a search for oil which may bear vitally on the international balance of power is now getting under way.

The search is being made in Alaska, under direction of the United States Navy, by the New York engineering firm of Hoover, Curtice & Ruby, in which Herbert Hoover, Jr., is a partner.

• **Set Aside by Harding**—Scene of the explorations is Naval Petroleum Reserve No. 4, an area of some 35,000 square miles which is bounded on the north by the Arctic Ocean. The tract, which had already attracted the attention of major oil companies, was set aside by President Harding in 1923.

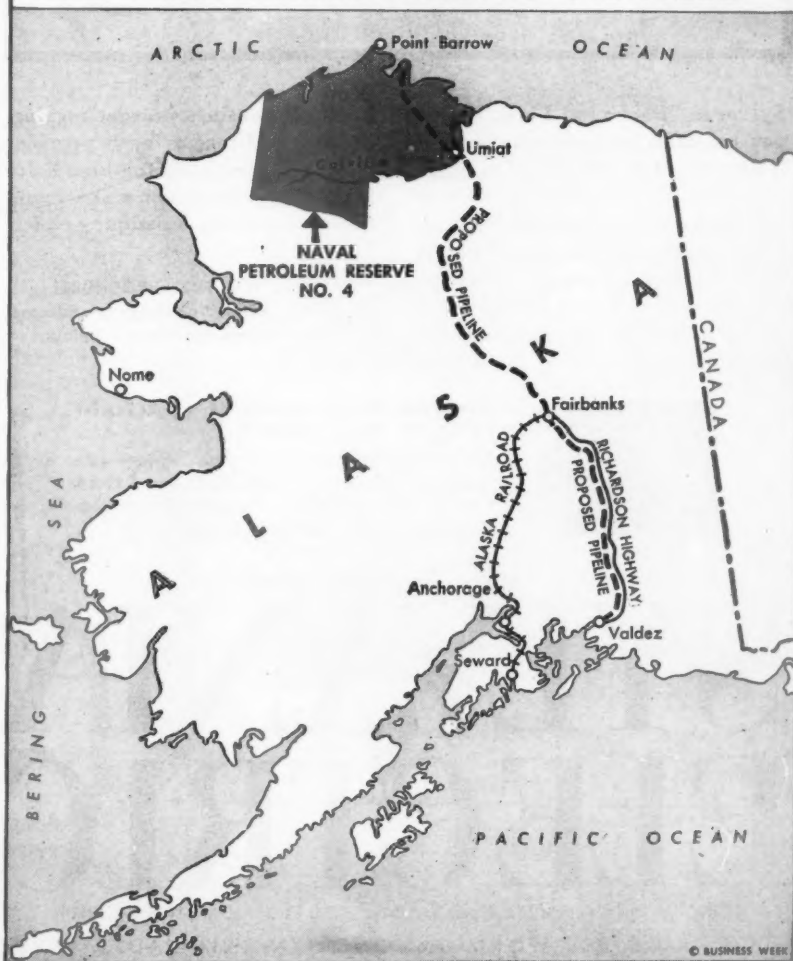
Now predictions are heard that it may, conceivably, be found to contain a greater petroleum reserve than that of all Texas before the first well was drilled there.

Although studies had been made by various parties, it was not until 1943, after war had imposed a tremendous drain on our continental oil reserves, that serious attention was given to the development of Reserve No. 4. Expeditions were dispatched by the Navy in March and June of 1944 to make exhaustive scientific studies.

• **Test Site Selected**—Interest soon centered in the Umiat district, plateau area in the southeastern part of the reserve. A test site was spotted and, in the winter of 1944, a rotary drilling rig was moved in for the first well, Umiat No. 1. The location chosen was seven miles east of Colville and about 175 miles south-east of Point Barrow.

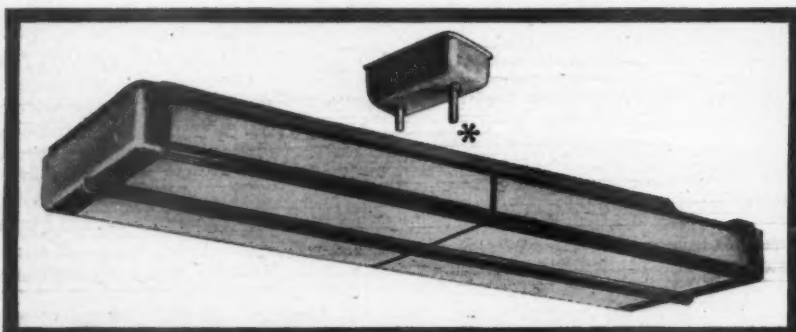
By the time the drill had penetrated 1,860 ft., Umiat No. 1 had made four oil showings. The oil obtained, like that found in puddles here and there

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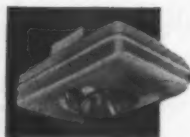
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In Alaska's Umiat district, Lt. Comdr. William T. Foran (above), who headed field surveys for oil there last summer, examines a sample of the good earth—and finds it promising.

along the lakes and bayous of the district, has a notable characteristic which chemists have not yet accounted for—a pouring point of -50°F .

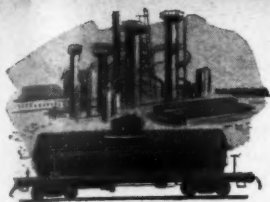
• **Significance**—This low pouring point seems particularly significant: (1) because of the utility that such an oil, of naphtha base, might have in engines of aircraft flying the stratosphere; (2) because it can be piped in lines laid on top of the ground.

Consideration is already being given to the idea of building a 16-in. pipeline to carry oil from the Umiat field to Valdez, Alaska, where it could be loaded into tankers. The distance is about 800 miles.

Lt. Comdr. William T. Foran, under whose direction five geologic field parties made surveys last summer, recently reported to the Navy Dept. that Petroleum Reserve No. 4 has "all the geologic qualifications demanded of a potential oil setting."

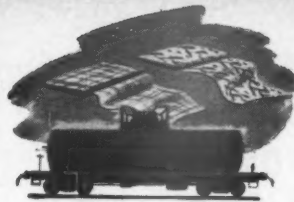
• **Most Attractive**—Foran concluded: "With its enormous volume of marine sediments, its numerous and conspicuous oil and gas seepages, and remarkably regular structural alignment, it may be legitimately considered the most attractive looking, yet untested petroliferous area in the Western Hemisphere."

Such language invites comparison with the petroleum resources of Venezuela and Colombia, which some authorities have figured might conceivably yield enough oil to last the hemisphere



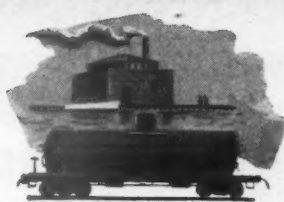
ALCOHOL

Gross, steel car, 6,000 to 10,000 gallon capacity.



CAUSTIC SODA

Heavily insulated steel car, with or without heater coils, 8,000 or 10,000 gallon capacity. Usually specially lined.



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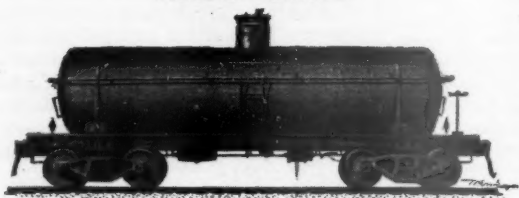
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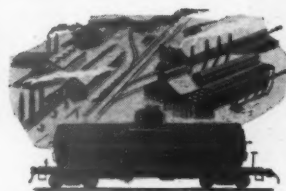
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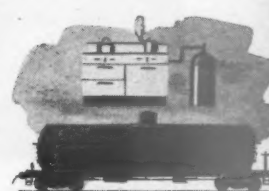
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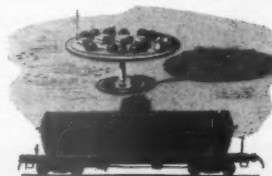
FUEL OIL

Steel car, steam coiled, 8,000 to 12,500 gallon capacity.



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Heavily constructed car, welded and insulated. Built to withstand internal pressures to 300 pounds. Capacity 10,000 to 11,000 gallons.



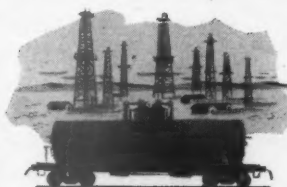
CORN SYRUP UNMIXED

Clean, steam coiled with heavy truck capacity. Usually lined with aluminum paint.



LUBRICATING OIL

Steel car, with steam coils, single or multiple compartment; usually 8,000 gallon capacity.



MURIATIC ACID

Car lined with pure or synthetic rubber; 8,000 to 10,000 gallon capacity.



ACETIC ACID

Aluminum Car, 8,000 or 10,000 gallon capacity.



GASOLINE

Clean car, 6,000 to 12,500 gallons; single or multiple compartment.



ASPHALT OR TAR

Heavily steam coiled car; with 2 or more inches of insulation; steam jacketed outlet; 8,000 to 10,000 gallon capacity.



LARD



WINE



MOLASSES



SULPHURIC ACID

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You may not be in the market for coil forms. But a container, a housing, any

component or moving part for your product may have to be made with just as great precision, in dimensions, insulation, abrasion or other qualities.

If your specifications can be met in the whole versatile range of plastic materials and plastic molding methods, Erie Resistor can make it. Don't be discouraged, even if some other manufacturer has said it couldn't be done. A lot of our jobs have been "impossible" until the irrefutable evidence of the completed product was presented to the delighted customer.



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for 200 years in terms of normal prewar consumption.

Foran's belief is that the government may ultimately decide to develop the oil resources of Reserve No. 4 in much the same manner that it now handles the Elk Hills Naval Petroleum Reserve of California. There one company (Standard Oil of California) engages private contractors to drill the wells, the cost being charged against the Navy Dept., and the managing company having an arrangement for purchase of the production.

• **For the Market?**—There has lately been talk in Washington to the effect that oil from Umiat might be marketed as soon as a reserve of 4,000,000,000 bbl. in the ground has been proved. Cost of building the pipeline—somewhere between \$60 million and \$80 million—might be borne jointly by the developing and purchasing company or companies, with perhaps some assistance from the N. . It has been estimated that the oil could be piped to Valdez for 10¢ a bbl.

Foran believes the oil possibilities of Reserve No. 4 overlap into much contiguous acreage which belongs to the Dept. of the Interior and is apparently susceptible of future development, under the oil and gas land leasing plan, by private individuals and companies.

Free Port No. 2

New Orleans gets rating from Commerce Dept. Zone will be operated much like New York's foreign-trade area.

The second free port to be established in the U.S. has been approved by the Commerce Dept.'s Foreign-Trade Zones Board for New Orleans. It will be operated much like the New York zone, established in 1937.

• **Other Cities Seek Rating**—The board defines a zone as "a segregated, fenced-off and policed area within a port where foreign merchandise may be landed, sorted, mixed, or otherwise manipulated with a minimum of control and without customs bond." Goods may enter a free port zone and be re-exported without payment of customs duties. Any goods entering this country from a zone, of course, pay regular tariffs.

At present manufacturing or exhibiting within a foreign-trade zone is prohibited, but legislation to remove this prohibition is before Congress.

The Colmer Committee on Postwar Economic Policy & Planning recommended the creation of a foreign-trade zone on the Gulf and one on the Pacific Coast. So far Los Angeles, San Francisco, and Houston have made ap-



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plication, but presumably Houston's chances went aglimmering with approval of the New Orleans zone.

• **May Increase Area**—Application for a New Orleans zone was first made during the war by the Board of Commissioners of the Port of New Orleans.

At first the zone was to have been located at the Florida Ave. wharf, but when the Navy turned back the board's public cotton warehouse, which had been in use as a Naval Supply Depot, portions were marked out for development as a free port site.

The area so designated takes in 1,167,000 sq. ft. of dock, warehouse, freight-car loading, balcony, and office space. This may be increased.

One plan under consideration is to divide the main warehouse buildings horizontally by making 30-ft. high single-level structures into two-floor warehouses in order to utilize all possible storage space. Later, more warehouses and water frontage may be added.

• **Near Belt Line**—Craneways and other load-unload machinery are already in the zone. One objection to the site—its excessive dampness due to river proximity and the normally high humidity of New Orleans which rots bagging and some commodities—will be overcome by installing heating units to reduce humidity. This has proved successful at the Army's Port of Embarkation wharves in New Orleans.

An advantage enjoyed by the cotton warehouse site is its nearness to the New Orleans public belt railroad, municipally owned line which connects with railroads serving the city.

Building sites are available behind the zone site where shippers using the foreign-trade zone may erect offices.

AUTOS UNDER ESTIMATES

Production of passenger cars during the first half of 1946 fell far below expectations. Detroit estimates that little more than one-fourth of the number of cars actually scheduled for assembly were completed.

A recapitulation by the Automobile Manufacturers Assn. estimated production for the first six months at 639,000 units, as compared with the projections of 2,319,000 made to the WPB last year. Output, however, is now on an ascending plane, and the third quarter is expected to see volume well above that in either of the first two quarters.

The association blamed five factors for the slowdown. Strikes in vehicle manufacturing plants, supplier plants, and coal and steel operations, three of the enumerated reasons, were obviously of heavy importance. Shortages of materials "directly or indirectly caused by restrictive governmental policies" was the fourth, and lowered labor productivity the fifth.

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when a hay-baler's
busy balin' hay?



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Many types of farm equipment, from tractors to fruit-sorters and canning machines, have built-in Veeder-Root *Countrol* in many different forms, provided by many different types of Veeder-Root Devices. *Your* equipment, too, can profit you more if it has this added utility . . . this proof of performance and guarantee . . . this protection against all the errors that creep in where there's guesswork. Write, and find out what *Countrol* can do for *you*.

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MARKETING

Upstairs Parking in Cincinnati

Merchants and other downtown interests back proposal to make upper-floor pavilions available to shoppers, thus combating congestion which creates pressures for retail decentralization.

Automobiles that roll from assembly lines all too slowly for much of the public are, in one sense, coming much too fast for downtown merchants in many U. S. cities (BW—Apr. 6 '46, p21).

These businessmen know that decentralization of shopping areas, arrested during the war, will be accelerated and that will mean sharp declines in all downtown property values, stores included.

To meet this problem Cincinnati businessmen have promulgated a novel plan for using upper-story parking pavilions.

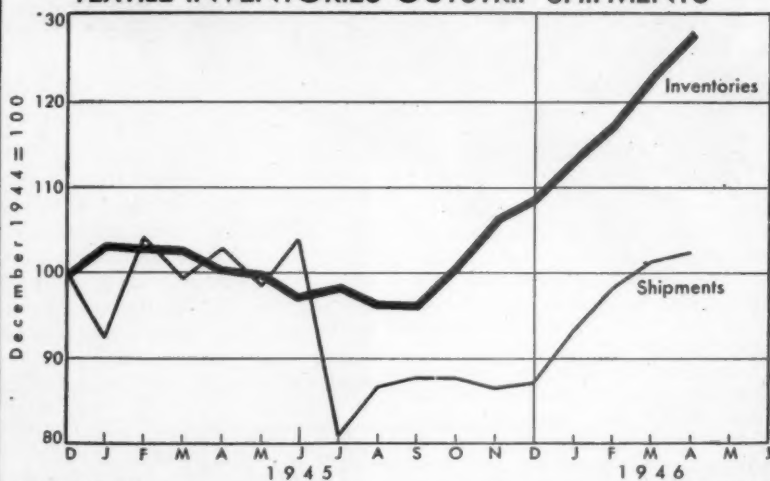
• **Cincinnati's Plan**—Randolph Sellers, executive secretary of the Property Owners Assn., has been designated by the Green City's businessmen to develop the idea, which has been dubbed "Cincinnati Parking." A corporation

will be formed, with purchases of stock limited to local businessmen who have at least an indirect stake in parking. Besides merchants, that brings in banks, insurance companies, and others having a prime interest in maintaining property values. So far, eleven of an expected total of 20 firms have committed themselves.

A unique feature of Cincinnati Parking's approach is that the plan will utilize upper floors of downtown buildings, which now lack tenants or are bringing submarginal returns, instead of using more costly ground space. Furthermore, these upstairs pavilions will not be purchased; the owners will be compensated with stock in the corporation.

• **Expectations**—This is expected to give them a better return, through dividends, than rentals they now receive, and to

TEXTILE INVENTORIES OUTSTRIP SHIPMENTS



Textile mills have been enabled to increase their stocks on hand relative to monthly shipments, and thus bring about a situation more closely in line with prewar standards. Military requirements brought annual shipments in 1944 to twice what they had been in 1939, but the concurrent rise in inventories was only 20%. The end of the war, however, gave mills a chance to catch their breath. Inventories never did slump as far as shipments, which were only 80% of December, 1944, levels on V-J Day. By April of this year shipments were back to end-of-'44 levels, but the mills had also managed to boost inventories 30% higher than they had been then—and withholding on the chance of price increases has been charged persistently to the mills.




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Latest
7 out
Model
average
the c
durab
Truck
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Ford
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TR
TO
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FORD TRUCKS LAST LONGER!



 Registrations *show it!* Operators *know it!* The low-priced Ford Truck is an endurance champion. Latest available official figures indicate *7 out of 11 of all Ford Trucks sold since the Model T are still on the job*—and their average age now is almost 9 years! Only the costliest of trucks equaled this Ford durability record. And the new Ford Trucks are even better. More than thirty engineering advancements give your new Ford Truck still more ruggedness, better economy, greater reliability. One of the 111 new Ford Truck chassis and body combinations fits *your* business to a T. Let your Ford Dealer show you!

**MORE FORD
TRUCKS IN USE
TODAY THAN ANY
OTHER MAKE**

THEY'RE BUILT TO LAST LONGER!

FORD ENGINES LAST LONGER!—New triple-life steel-cored Silvaloy rod bearings—new Flightlight cam-ground, four-ring aluminum alloy pistons for enduring good compression and oil economy—full-pressure lubrication, two-pump cooling, crankcase ventilation and efficient air- and oil-filtering.

FORD AXLES LAST LONGER!—Load-free axle shafts in all models minimize shaft breakage even in severest service. Triple-roller-bearing, straddle-mounted, main drive pinion greatly prolongs gear life. Generous axle capacity is a fixed and permanent Ford policy.

FORD FRAMES LAST LONGER!—Heavy channel-section frames, doubled from spring to spring

in heavy duty models—the most durable and strain-resistant type of construction.

FORD CLUTCHES LAST LONGER!—Semi-centrifugal principle of all Ford clutches reduces slippage, delivers full engine torque smoothly, easily, without grab.

FORD CABS, FENDERS, BODIES LAST LONGER!—Compare Ford metal thickness with what your truck dollars buy elsewhere! Ford extra thickness means extra years of service. Remember Ford famous long-life paint finish! Check the dozens of extra-strength, extra-life features of Ford body and cab construction—the hardware—the hardwood flooring and other long-lasting materials.

OUR 111 CHASSIS AND BODY COMBINATIONS COVER OVER 95% OF ALL HAULING JOBS!

CLEANING UP A COOL \$1,000

"Rejects" Cut by Change in Cleaning Process

Cleaning machined parts before assembling them was a headache for a manufacturer. He was using an expensive chemical for the cleaning process, but its rapid evaporation chilled the metal, causing it to sweat and rust.

Sun Spirits, "Job-Proved" on metal cleaning work in hundreds of plants, helped this manufacturer solve his production problem and made possible savings estimated at \$1,000 a year.

Parts cleaned in Sun Spirits now pass inspection with no indication of rusting. *Rejections are reduced to the minimum.*

This concrete example is typical of how Sun products have proved their value, not solely in the laboratory, but on the job — where it counts.

In mills, mines, and machine shops . . . in power plants . . . in processing rubber, textiles, leather . . . wherever petroleum products are used . . . Sun Engineers can help to speed up production and cut costs. Call the Sun man near you today.

SUN OIL COMPANY • Philadelphia 3, Pa.

Sponsors of the Sunoco News-Voice of the Air—Lowell Thomas



SUNOCO

SUN INDUSTRIAL PRODUCTS

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assure in the long run a better return from first floor rentals.

If existing buildings are not strong enough, the corporation will build new ones, but in any case valuable front footage on the ground floor will be rented to stores.

Each pavilion will accommodate only a relatively small number of cars, but the association figures that the ten "lots" of the kind it plans to establish will create less street congestion than would one big garage.

• **Enthusiasm Reported**—Participating stores will be asked to put up money for engineering the project, but Sellers says there is less difficulty in raising funds than in keeping down the number of participants. Some of this enthusiasm may have been engendered by the 2,000-car parking garage which the John Shillito Co., Cincinnati department store, is currently building for the use of its customers. Shillito is also an enthusiastic participant in the cooperative plan.

Two safeguards are projected to keep pavilions for shoppers only: (1) parking rates will be low for the first three hours,

then become disproportionately higher, (2) pavilions will not open until department stores do at 9:30 a.m., thus eliminating all-day parkers, most of whom have to find their space before that time.

• **Delivery Service**—Department stores are contemplating a free delivery service to shoppers' cars. However, they approve the group's plan to charge nominal parking fees, on the theory that customers realize that the cost of "free" parking would have to be added to price tags.

Some features of the Cincinnati plan have already proved successful elsewhere—notably in Oakland, Calif. There free parking space for shoppers was established in 1931 as part of a master plan to curb decentralization of the downtown business area (BW—Jan.11'41, p18). Six lots, accommodating 1,000 cars, are operated by the Downtown Merchants Parking Assn., Inc.

• **How It Works**—When a shopper leaves her car, she receives a ticket that can be validated at any participating store, whether or not she makes a purchase. If she overstays the one or two hours

specified, she pays 10¢ an hour overtime, up to 50¢.

Merchants, who foot the bill monthly according to the number of their validations, find the cost is almost uniformly 5¢ per ticket. Their chief problem now is turnover, which has slowed down considerably since war-fattened incomes made shoppers less careful of their dimes.

Parcel Coup

United Service gets lush Macy account, last holdout in Manhattan for own deliveries. Also enters Minneapolis area.

In metropolitan New York the last major department store to operate its own delivery truck fleet has abandoned the job and joined more than 375 other stores in the trading area which, during the past 16 years, have turned the delivery task over to United Parcel Service, Inc., the national delivery serv-

Shopping With a Key in a Saunders Keedoozle

A demonstration unit of the improved Keedoozle has been built by Automatic Electric Co., Chicago, where it is on display. Keedoozle is the automatic grocery store by which Clarence Saunders, Memphis originator of the Piggly Wiggly stores of the twenties, will attempt another comeback.

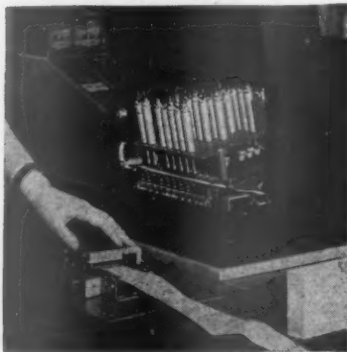
In the Keedoozle, the customer lists her purchases by inserting a special key (left), given to her as she entered the store, into a slot under the

display of each item she wishes to buy. Inclosed in the key is a paper tape. When the key is inserted in a slot, the name and price of the item are automatically printed on the tape, along with a series of contact holes like those on key-punched tabulating cards.

• **Rapid Delivery**—Her purchases completed, the buyer takes the key to a clerk, who may also be the cashier in a small Keedoozle store. The clerk runs the tape through a translator mechanism (center) similar to that of a tape-operated teletype machine. Each punched symbol on the tape actuates a stock-room mechanism, behind the scenes, which automatically drops the listed articles upon a conveyor belt (right). The entire order rides the belt to the

cashier, together with the totaled bill.

Built to deliver articles at the rate of 300 per minute, the unit is a new version of the Keedoozle that Saunders tried out in Memphis in 1939-40 (BW—Apr.15'39,p41). He plans to sell exclusive franchises to local operators of Keedoozle stores. Later on, he hopes to adapt the mechanism for dispensing five-and-ten-cent merchandise, hardware, automobile accessories, and other lines.





**Corrosion gets the
Brush-off**

with easy-to-apply

Neolac

— The Miracle Plastic Coating That Protects

Armor Coats Metal, Wood and Concrete Against Corrosion, Rust and Age

Eliminate corrosion this quick, easy, low-cost way. NEOLAC is different—tougher, better, lasts up to twice longer than most paints. Quick drying Neolac leaves a lustrous, "live" film of pure plastic impervious to corrosive fumes and weather. It is non-oxidizing, won't deteriorate with age, won't chalk-off. Neolac brushes or sprays on most every surface, bonds tightly even over previous paintings. Ask your Industrial Distributor, or write direct, for full information.

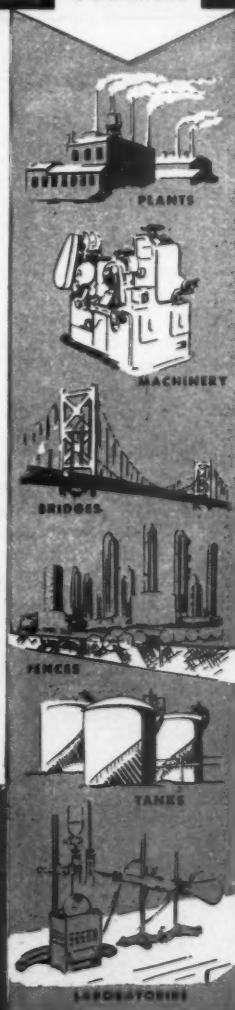
SAVES MONEY, TOO!



- Gallon covers up to 450 square feet.
- No primer. Two coats ample.
- Longer life.
- Leaves no "skin" in container.

**CHAMBERLAIN
ENGINEERING
CORPORATION**

5000 BRIMFIELD ROAD AKRON 9, OHIO



ice now operating in 18 major cities.

Convinced that the economies of consolidated parcel delivery outweigh the advertising advantage of having its own fleet of trucks, Macy's, Manhattan, and Macy-owned Bamberger's, Newark, sold some 500 trucks to United Parcel, arranged to have their 1,000-odd delivery employees added to the U.P.S. payroll.

• **Expanding Service**—It was the second major expansion in a month for U.P.S. Early in June, the firm added another major trading area when it signed up one department store and the major specialty shops in Minneapolis.

Its operations now cover Seattle (where the company was started in 1907), Portland, San Francisco, Oakland, Los Angeles, Long Beach, San Diego, Minneapolis, Milwaukee, Chicago, Detroit, Cincinnati, Philadelphia, New York, Brooklyn, Newark, and Paterson, N. J.

• **Highly Specialized**—Parcel delivery is a specialized, highly efficient operation as developed by James E. Casey, president and founder, and his associates. Packages for delivery are picked up from the various stores that contract for the service, taken to a central station. Here they are separated (conveyor belt systems are used in larger installations) by districts, and trucks then take all packages for a given district to a delivery station.

Expert sorters and loaders then divide the parcels by routes and load them into delivery trucks. All this is usually done at night so that when the driver arrives in the morning, he picks up his delivery list and starts out on his route without further ado.

• **Courtesy Stressed**—Drivers wear uniforms, are trained in courtesy, schooled to remember that, so far as the customer is concerned, they represent the store, for example Tiffany's or Hearn's, Brooks Bros. or Hattie Carnegie, when they deliver a parcel.

Restrictions on delivery service cut down U.P.S. operations during the war. Even so it has today some 5,000 employees, 4,500 trucks (half reserved for Christmas and Easter peak delivery periods), is pressuring motor car manufacturers for more trucks to meet expanding needs, replace worn out equipment.

• **How the Stores Pay**—United Parcel Service is not a cooperative enterprise; it is owned by Casey and his associates. Stores contract to have all their deliveries made by U.P.S. (contracts usually run five to ten years), pay according to the extent to which they use the service (C.O.D. deliveries carry a higher rate, big packages cost them more than do small ones), and have their rates adjusted periodically in order to protect both the store and the U.P.S. from changing costs.

A Real Pioneer

One merchant prince of Chicago, Lytton—now 100—has lived to see techniques that he inaugurated pay off in big way.

Astoundingly, one merchant prince of Chicago's fabulous 1870's and 1880's is alive today and running the store with which he helped to promote State St. into one of the world's great retail stems.

Henry C. Lytton founded the Hub 59 years ago, only last March changed the store's corporate style to Henry C. Lytton & Co. He survives by decades such figures as Marshall Field, Potter Palmer, and Levi Z. Leiter, whose names today are legend.

• **July 13 Is Birthday**—Next week Henry C. Lytton reaches his century mark. He was born in New York on July 13, 1846.

In the fashion of that day, at the age of 19 he headed westward to make his fortune. It took him 22 years, half a dozen jobs, and a bankruptcy to reach Chicago, which all the while was his ultimate goal. His first try was at St. Louis, in 1865, where he pyramided the profits of peddling boots to soldiers returning from the Civil War and to wagoners headed across the Great Plains.

• **On Every Barn**—This modest start at merchandising to men made him enough cash to set up a clothing store in Ionia, Mich. There he won local fame and moderate prosperity by painting his store's name on every barn in



Centenarian head of a sexagenarian store with a \$19,000,000 1946 sales forecast, Chicago's Henry C. Lytton once sold boots to Civil War soldiers.

BUSINESS WEEK • July 6, 1946



■ A cotton fibre content paper in a broad range of colors, Chieftain Bond is especially suitable for printing and lithographing. It has sturdy texture, impressive feel, appearance and uniformity. Chieftain Bond is used largely for business stationery, company letterheads and envelopes, sales letters, office forms and other semi-permanent documents.

NEENAH

BETTER BOND PAPERS FOR EVERY PURPOSE

These famous names identify the papers manufactured by the Neenah Paper Company. The name *Neenah* appears in each watermark to identify the genuine for your protection.

OLD COUNCIL TREE BOND

SUCCESS BOND

CHIEFTAIN BOND

NEENAH BOND

NEENAH THIN PAPERS

TUDOR LEDGER

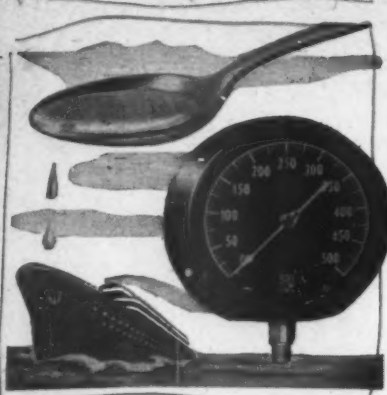
STONEWALL LEDGER

RESOLUTE LEDGER

NEENAH LEDGER

NEENAH INDEX BRISTOL

NEENAH PAPER CO. • NEENAH, WIS.



Power for a liner!

THERE is enough atomic energy in a spoonful of water to drive a liner from New York to Southampton.

Whenever and wherever atomic energy is used, there will still be Ashcroft Gauges whether it be in air, land or sea transportation, utilities or industries.

For there will be pressures to indicate or record—pressure of steam, air, gases, water and other liquids.

Ashcroft Gauges have been famous for enduring accuracy for nearly a hundred years. They have flown in planes near the North Pole and over the desert sands at the equator. They have crossed the seven seas in ships and served faithfully under the waters in submarines. In the instrument boards of locomotives they have shown the truth to the engineer. Power and light companies trust them to reveal accurately the pressures in boilers and lines.

So wherever gauges are required, it is safe to specify "Ashcroft."

Stocked and sold by leading Distributors everywhere... When you order gauges, insist on ASHCROFT... Write for booklet.



ASHCROFT
Gauges

MANNING, MAXWELL & MOORE, INC.
BRIDGEPORT 2, CONNECTICUT

Makers of Ashcroft Gauges, Hancock Valves, Consolidated Safety and Relief Valves and "American" Industrial Instruments. Builders of "Show-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties.

the neighborhood. But success in Ionia didn't match his big-city ideas.

He sold his Ionia shop, took his brother into partnership, and opened a clothing store in Grand Rapids. To attract trade, he daily dispensed caps and socks gratis to all comers, from a crate before his door. His spectacular techniques caught on, so that by the time he was 26 he was doing an annual volume of \$100,000. Overconfidence led him to spread his assets thin.

• **Into Bankruptcy**—When the Panic of 1873 struck, it knocked him into bankruptcy and a 33% settlement with his creditors. He subsequently paid off all of his creditors in full.

When he pulled out of Grand Rapids, he was broke. But in the lusty Middle West of that times, one failure was no catastrophe for an ambitious youngster. Lytton scratched up a job managing a clothing store in Indianapolis, with a share in the profits. Here he applied again the techniques of high-powered press-agentry, including a bona fide show-window wedding. As in Ionia and Grand Rapids, his tricks caught on.

• **Smart Operator**—It took him until 1887 to amass \$12,000. Meanwhile he was building a reputation in the clothing and furnishings trade as a smart operator.

Taking his \$12,000 bankroll to New York, he talked a wholesaler into giving him a \$60,000 line of credit. In Chicago, finally, he set heads wagging dolefully by renting a store six blocks south of the main shopping center, which then was at the north end of what subsequently became the Loop. To give his off-center site a chance, he began a career of drumbeating on a scale then practically unprecedented in retail advertising in newspapers.

• **On Land and by Air**—For a full month in advance, he used quarter-page space to announce his opening date; one day he even used a half page.

He released balloons carrying certificates entitling finders to merchandise in his store—some for \$100, big money then. He tossed a hundred overcoats from the store roof one by one to a crowd below.

When he bet on Grover Cleveland for the presidency in 1888 and lost, Lytton donned white tie and tails and sawed half a cord of logs into stovewood—in the store window.

• **Discharge Buttons**—Today the store's promotion is more subtle. The Hub was among the first to offer extra discharge buttons free to veterans who brought in their discharge papers. Lytton's is

Yet a Little Sleep, a Little Slumber

This week some 450 independent New Jersey druggists will have the insomniacs in that state going and coming. If the sleepless ones don't have a doctor's prescription for pills, the druggists will try to sell them a \$5.25 phonograph record that's supposed to hypnotize the stubbornest cases into drowsiness.

De Luxe Record Co. of Linden, N. J., cooked up both the record and the new merchandising twist. Issued several months ago, the plastic, two-sided record reproduces hypnotist Ralph Slater's soft talk against an organ background. Department stores, and specialty shops like Manhattan's Lewis & Conger, originally featured the disc (labeled "Time to Sleep") as an attractive novelty.

• **Market Test**—Now De Luxe wants to hit the mass market and has lined up the New Jersey Wholesale Drug Co. to distribute to druggists. To tone down the substantial retail price of \$5.25, De Luxe uses an old merchandising come-on that is an innovation in the record industry—a money-back guarantee if the user isn't satisfied within a week. If the New Jersey test pans out, similar distribution will be attempted in the rest of the nation.



To gagsters who want to know who shuts off a nonautomatic phonograph when the insomniac is carried away by Morpheus, De Luxe has a stock answer: The record is merely supposed to induce sleep, not lay the listener out cold. Slater is now making personal appearances to demonstrate his powers on a mass basis.

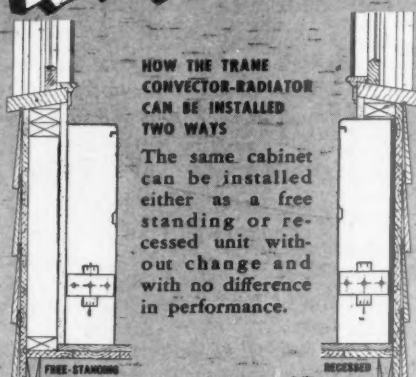
De Luxe's next venture will be an album called "Children's Garden of Manners." It's a series of easy-to-remember songs intended to housebreak the very young and instill politeness in them painlessly.

NOW..

Convactor-radiator COMFORT at the Price of Ordinary Radiators

**Here's HOW the New Trane Model
Fits EVERY Application**

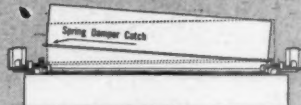
- Works on any hot water or 2-pipe steam heating system.
- Can be installed either free-standing or recessed.
- Complete range of sizes to meet every requirement.



**HOW THE TRANE
CONVECTOR-RADIATOR
CAN BE INSTALLED
TWO WAYS**

The same cabinet can be installed either as a free standing or recessed unit without change and with no difference in performance.

HERE'S A PLUS FEATURE



Dampers for the positive control of heat can be obtained and installed in two minutes without tools. Operated by an adjustable chain through the grill, these dampers give instant response without the use of valves.



For a complete description of the entire Trane Convactor-radiator line, write for Bulletin DSB-380.

TRANE'S NEW MASS PRODUCED MODEL GIVES LUXURY HEATING TO EVERY APPLICATION

Now, for the first time, Trane Convactor-radiators will be available directly from local stocks—at prices reduced to the level of ordinary cast iron radiators. Formerly custom-built to order, this most modern method of heating is now mass produced for use in every industrial and commercial heating application.

Trane has standardized the Convactor-radiator to function with equal efficiency in any hot water or 2-pipe steam heating system. And the new design can be installed in either of two ways, free-standing or recessed. Specification is simply a matter of determining needed sizes, since one style fits nearly every application.

COMFORT TO MODERN STANDARDS

The pleasant warmth of Trane Convactor-radiators provides a new concept of heating comfort. Rooms are filled with gently warmed air in motion, for a fresh clean feeling that discourages fatigue. Here is the ideal combination of all modern methods of heating.

Trane Convactor-radiators blend harmoniously into any surrounding. Their rounded edges and smooth surfaces can readily be finished to match any decorative scheme, yet they have the strength to withstand decades of service. One or a dozen Convactor-radiators can be used as replacements in a modernization program, since their use has no upsetting effect on a heating system.

Whether your foremost wish is for comfort, economy, or modern beauty, the new Trane Convactor-radiator asks no compromise. Your architect, engineer, contractor, or wholesaler will welcome an opportunity to furnish you with further information.



THE TRANE COMPANY
The House of Weather Magic
LA CROSSE • WISCONSIN
TRANE COMPANY OF CANADA, LTD., TORONTO

MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT

"PERRY GRAF Decal Selector helped build cream prospect list for few cents per name," says Meyercord



● Twenty percent of the buyers in any market do eighty percent of the buying. How to ferret out these unknown potential users of decals was the Meyercord problem.

Size alone did not make a prospect. Titles did not mean buying responsibilities. Cold sales calls would be slow and expensive. Meyercord wanted inquiries which would reveal prospects—quickly—for a few cents per name. They decided to offer in Meyercord

advertising something which would appeal tremendously to men who could buy decals. A Perry Graf representative was called in. A decal selector was promptly designed and manufactured by Perry Graf Corporation. "Response was unusually heavy," says Ralph Royer, Meyercord's Advertising Manager. "The Selector not only drew inquiries from the men we wanted to find, but it helped them ferret out new applications for decals."

BUILD PROFITS These 8 Ways

Perry Graf Product Selectors, Calculators, Visualizers and Demonstrators will . . .

1. Focus demand on the most profitable items.
2. Save selling time with fingertip control of information about your product.
3. Make your sales story easy to grasp—easy to remember.
4. Suggest your product name when purchases are being considered.
5. Make it easy to specify your product.
6. Make your product easier for distributors' salesmen to sell than any other.
7. Inject a new selling tool into your sales and advertising program.
8. Help to build cream prospect lists for only a few cents per name.

**You Merely Define the Problem
... We Do the Rest**

Perry Graf designers are experienced in putting complicated information into simple, inexpensive graphic form. You simply tell us your problem. We promptly submit designs and prices—without obligation.

Write for FREE Samples

A folder listing 140 general types of Perry Graf sales tools and describing Perry Graf design and manufacturing facilities, and sample Perry Grafts, free on request. Address: Planning Department, Perry Graf Corporation.



FOR NURSERY NIGHTS

Sylvania Electric Products, Inc., which developed round fluorescent lights for Christmas trees last year (BW—Sep. 1 '45, p. 73), last week announced Glo-Ball nursery lamps (made and distributed by Gibson Products Co., 5 Beekman St., New York) which use the same type bulbs. Kitten or bear-shaped, the lamp is molded of zinc alloy and coated with baked enamel; it is unbreakable and requires no auxiliary equipment. The cost of burning its 5-watt bulb ten hours a night is about 2¢ a month. The lamp will retail for about \$5.

one of the outstanding users of radio time.

Among all the chores of running the big establishment, centenarian Lytton cherishes as his particular province his company's advertising.

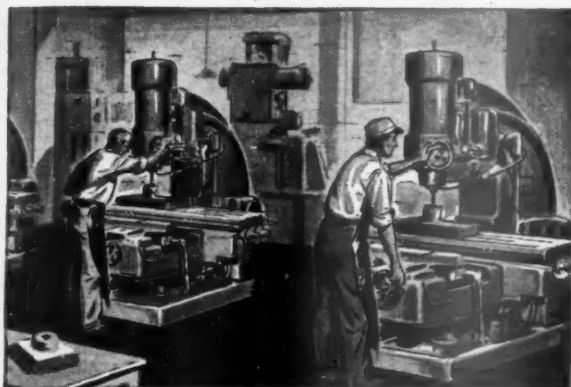
In 1928, aged 83, Lytton sold his store to an ambitious clothing manufacturer and retired. But the purchaser fell victim to the depression and had to turn back the store. Lytton's son, George, had been trained as his right-hand man, but George died at the crucial moment. So the elder Lytton, at 86, returned to the retail arena and pulled his store out of the deficit.

● **Still the Boss**—Today he remains president of the firm. Though he has turned over to 38-year-old Willard W. Cole the operating chores of executive vice-president, the old gentleman still demands a full accounting of his lieutenant's stewardship.

Shortly before he returned in 1926, octogenarian Lytton began spreading his business into the suburbs. He has

WHO SAYS AMERICA HAS EVERYTHING IT NEEDS?

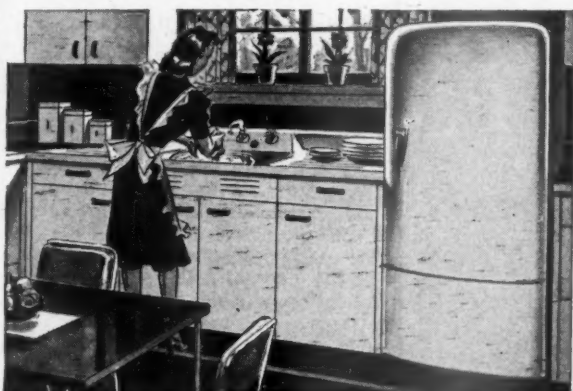
Newspapers every day tell the real story



INDUSTRY NEEDS NEW EQUIPMENT — because it means increased operating efficiency, new low production costs. For example, "We need 1,000 big, new locomotives," say the railroads. To manufacture these and countless other industrial and consumer products which America needs, 60,000,000 tons of steel are required this year.



FARMERS NEED NEW EQUIPMENT — to replace worn-out tools — to help produce all the food that's needed to satisfy 1946 demands. In order to meet their requirements, it is estimated that farmers need approximately \$436,000,000 worth of new tractors, \$300,000,000 worth of other farm machinery.



FAMILIES NEED NEW EQUIPMENT — to handle jobs at home more efficiently! Are you anxious to own a new postwar refrigerator? So are 2,800,000 other Americans. Not only that: more than 2,300,000 washing machines, 18,000,000 radios, 750,000 electric ranges are now marked "sold" before they are even manufactured.

How Can America Get What It Needs?

The answer is *more production!* America's industrial output of goods per man-hour rises at the rate of 50% every ten years — sets the pace for low prices, high wages, more jobs; higher standards of living. That's the formula that keeps America *busy*. New methods, new efficiency plus modern new machine tools have created production miracles in the past, are ready to satisfy America's needs today and tomorrow. Remember: a man's productivity is no longer measured by the clock, but rather by the capacity and efficiency of the machine he operates. This is the time for manufacturers to start replacing high cost obsolescent tools with modern, new machine tools which make possible the low costs, low prices, high wages everybody wants.



THE GREATEST U. S. NEED is to give all Americans a chance to enjoy the basic necessities of American good living. The chart above represents a dramatic blueprint of the production job which lies ahead. It offers a challenging opportunity to the imagination, enterprise and initiative of every American manufacturer.

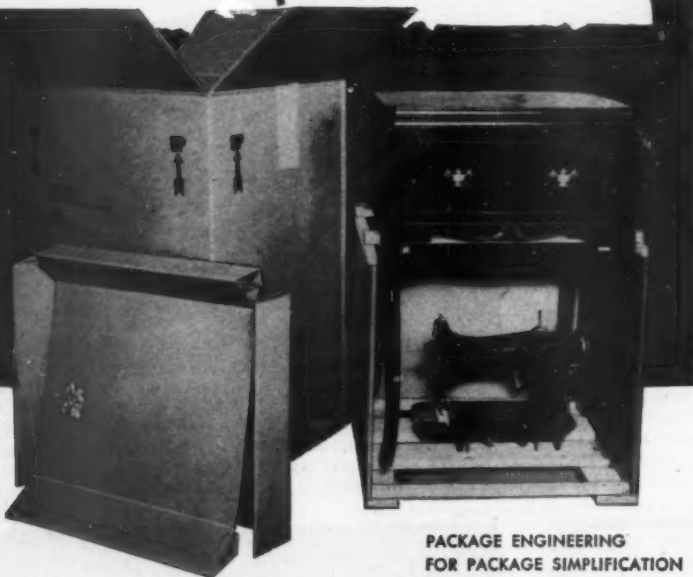


BETTER PACK RIGHT

... THAN WRONG



Have you wished for a way to simplify your entire packaging procedure . . . to rescue it from the costly, time consuming maze arising from old-fashioned methods? Then submit your packaging problems to the H & D Package Laboratory for free analysis. It's as simple as that.



PACKAGE ENGINEERING
FOR PACKAGE SIMPLIFICATION

Now—while the box industry is awaiting additional raw materials to meet customers' full requirements—is an especially opportune time to plan your new package design. A corrugated shipping box, properly engineered to your specific needs, assures safe delivery of your products. That is its primary duty. In addition, however, the engineered shipping box reduces handling costs, improves warehousing, curtails complaints, lowers shipping costs, expedites packing and unpacking, and adds advertising value to the product. The H & D Package Laboratory has one fundamental function—to improve packaging methods. That it does so is a matter of record. The Little Packaging Library is yours for the asking. The Hinde & Dauch Paper Company, Executive Offices, 4604 Decatur Street, Sandusky, Ohio.

H&D HINDE & DAUCH
AUTHORITY ON PACKAGING

FACTORIES IN: Baltimore • Boston • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J.
Hoboken • Kansas City • Lenoir, N. C. • Montreal • Richmond • St. Louis • Sandusky, Ohio • Toronto

full-fledged stores in suburban Evanston and Oak Park, and in Gary, Ind. Now he has well under way a scheme for converting the Evanston establishment into an ultramodern store.

Last year Lytton's bought Young-Quinlan Co., Minneapolis clothing store (BW—Jun. 9'45, p112). Also, Lytton's now operates leased men's and boys' clothing departments in five Block & Kuhl department stores in Illinois.

• **And in a Hurry**—As a tonic during the depression, Lytton in 1932 upset his lifetime devotion to male habiliments by leasing women's departments for his State St. store to Ringman, Inc., a subsidiary of Goldring-Nieman Corp., New York. Later, with danger averted, Lytton bought 50% of Ringman. This year he bought the rest and will soon change the name to Lytton Merchandising Corp. Results of this consolidation: 1946 promises the largest sales volume in Lytton's career—over \$19,000,000. Record first-quarter earnings of 76% on each of Lytton's 300,000 shares contrast with 27% in the corresponding period of 1945.

Expansion is still the word with Lytton. At last reports he was harrying the architects to bring in the blueprints and the contractors to hustle along building materials for a new store near 63rd and Halsted streets.

Spry in mind as when he first struck Chicago in 1887, Henry C. Lytton already has the lease in his pocket.

NOVEL RENT GOUGE

Landlords in Atlanta are being caught red-handed in a novel evasion of OPA rent ceilings: They rent rooms on condition that the occupant take his meals in the house, and then serve the meals at impossible hours.

For example, a room with a ceiling of \$20 a month rents for \$50 with meals. But since meals are served only at such hours as 8:30 a.m., 1:30 p.m., and 5:30 p.m. when the tenant is likely to be at work, or en route to or from work, frequently the practical effect is a \$50 room rental. Tie-in rentals of room and board are illegal anyway, unless they antedate the rent freeze of March, 1942.

STORE SALE SHAPING UP

Negotiations for sale of Netcher's Boston Store in Chicago, reported last fall (BW—Sep. 15'45, p90), are nearing completion. Announcement has been made that Edgar L. Schnadig and associates will pay approximately \$9,000,000 for the 75-year-old business, including the State St. building and the land on which it stands.

The sale was previously reported snagged on the Netcher estate's valuation on the real estate involved. Pres-

ent owner of the business is Mrs. Mollie Netcher Newbury, widow of founder Charles Netcher who died 41 years ago.

Plans include financing the purchase with loans from insurance companies and banks, and sale to the public of 400,000 shares of common stock at \$10 to \$12 a share, through an underwriting by Paul H. Davis & Co. Between \$11,000,000 and \$12,000,000 will be raised, and the balance above the purchase price will be used for modernization and working capital.

Schnadig is chairman of the board of Alden's, Inc. (formerly Chicago Mail Order Co.). Alden's has no connection with the Boston Store purchase.

The Boston Store in 1945 did about \$17,500,000 total volume, considerably less than the State St. department stores with which it is usually bracketed.

P.S.

Trademark records in the Philippine Islands were destroyed during the war, warns the Toilet Goods Assn., Inc. Owners of trademarks registered there should file certified copies of their registration certificates with the Bureau of Commerce in Manila.

Gamble-Skogmo, Inc., reported gross sales of \$29,248,452 for the first five months of 1946 in Gamble stores. That's 87% above the same period in 1945, and the largest volume in the company's history.

John Boettiger and Anna Roosevelt Boettiger, who recently bought a Phoenix (Ariz.) throw-away advertising sheet, the Shopping News, converted it to a weekly newspaper with the issue of June 27. They plan eventually to make it a daily.

Magnetic wire recorders, made by Radiotechnic Laboratories, Evanston, Ill., are available at R. H. Macy & Co. for \$595, immediate delivery. They record sounds within 5 ft. of the microphone, the recording can be played back immediately, and the wire can be re-used thousands of times. Macy's claims they give a more faithful reproduction than the average office recording unit and recommends them for use at sales conferences, dealer meetings, or what-have-you.

Philco is publicizing its home freezers by claiming that prices are "by far the lowest of any national-brand manufacturer." The 24-ft. model will sell for \$149.50 anywhere in the U.S.; the 5-ft. job is pegged at \$199.50.

Bernarr Macfadden plans to be back in the general magazine business this fall with a detective magazine, to be followed by other types of publications. Macfadden has been absent from the ranks of general publishers for five years (except for a couple of physical culture publications).

Increased production, permanent benefits for labor



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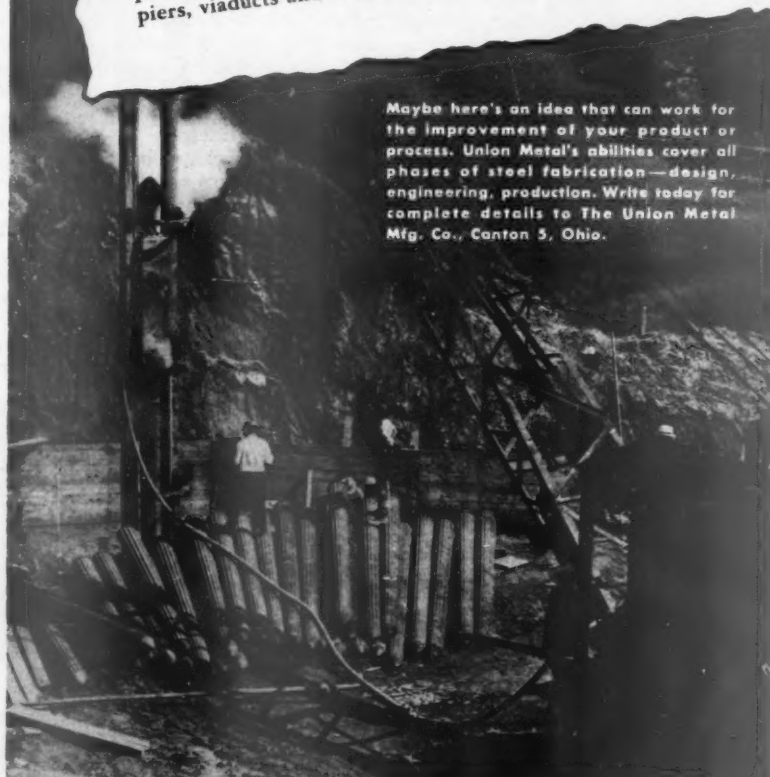
For this reason Union Metal products—from poles to parking meters—are engineered to help the worker do his job better, more quickly, more easily.

This increased product efficiency—the result of 40 years of craftsmanship in steel fabrication—also means

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UNION METAL

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PRODUCTION

Nondestructive Tests Cut Costs

Wartime strides in methods of separating good materials from bad, sound parts from defective ones, will be advanced even further in new peacetime applications.

Noteworthy advances are being made in the art of nondestructive industrial testing—the separation of sound metal or nonmetal parts from defective parts without impairing their usefulness. Radiographic, supersonic, magnetic analysis, magnetic-particle, and spectroscopic methods reached new highs in wartime development.

The peacetime application of such testing methods to detect irregularities such as cracks, seams, porosity, laminations, laps, and for inspection of sealed assemblies has already resulted in reduced manufacturing costs. In one case, a manufacturer had a \$40,000 yearly loss on machining alone because of defective material. Testing methods which sorted out defects before machining cut machining costs by 40%, and in addition foundry rejects dropped. It is estimated that up to 80% of castings, forgings, and diecastings in aluminum and magnesium, which might be scrapped for flaws revealed by visual inspection, can be salvaged through judicious use of X-ray testing procedures.

• **Not Competitive**—The different types of nondestructive tests are, curiously enough, not in competition. Rather, they tend to supplement each other. Their proper use requires setting up a tolerance standard for irregularities; that is, determining which irregularities can be tolerated without seriously impairing the operation or use of the part. The testing can be done on a routine production basis after such tolerance standards are set up.

Nondestructive tests are legion. There are numerous simple ones, such as: (1) spark testing of steel bars roughly to classify composition, and (2) ring filing of steel bars to reveal laminations. Many physical and electrical laws can be used to devise tests.

Radiographic—This group includes X-ray, fluoroscopy, and X-ray diffraction methods.

X-ray equipment is now made in a wide range of sizes with penetrating powers suitable for examination of materials ranging from thin sections of aluminum, magnesium, and wood to steel 12 in. thick. Current applications in order of importance are (1) light alloys, (2) steel, (3) other metals, and

(4) plastics. The last promises to become a growing field, particularly since plastic parts are getting larger all the time and the speed of production is increasing.

All modern X-ray equipment is shockproof. Three basic types are produced: (1) cabinet-type machines rated to 250,000 volts for examining small parts in a lead-lined chamber with doors interlocked so that the X-ray tube operates only when the doors are closed, thus permitting the operator to remain in attendance; (2) equipment rated up to 2,000,000 volts and designed for medium-sized objects where the X-ray machine is installed in a special room which protects outside personnel from radiation; and (3) mobile equipment rated up to 400,000 volts for X-raying large, heavy assemblies at the site of building or erection.

The first category of equipment, cabinet-type machines, has been adapted to production by using suitable materials-handling arrangements. In numerous instances, hand placement of objects within the X-ray chamber has been superseded by feed tables using dollies or platens, roller conveyors, conveyor loops, or conveyor-type turntables.

Despite the broadened scope of industrial X-ray, certain limitations are

inherent. First, the negative, or radiograph, must be exposed, developed, examined, and collated with the piece examined. Work in process must stop or be laid aside until these steps are completed. Second, a radiograph does not reveal deep-seated irregularities unless the part is viewed at the correct angle, and laminations may be missed. Third, the inspection cost per piece is not negligible.

Fluoroscopic tests—X-rays will excite a fluorescent screen. Definition of the shadow image is not as sharp as with film, yet for many purposes fluoroscopic examination is particularly good, because it permits the object to be turned at will or to pass along a conveyor at rapid viewing speeds. Major uses of fluoroscopy are examination of light alloys, diecastings, and plastics, also correctness of assembly of sealed mechanisms.

The new high-brightness fluoroscopic equipment operates at costs of \$15 to \$20 per hour, views hundreds of pieces in that time. But there is no record made. So the latest development now coming on the market is a machine equipped with a 70-mm. camera to record shadow images of parts placed on the fluorescent screen. The photo-fluorographic process is not quite as fast as earlier methods, but the film strip can be examined at leisure, and corrections made in process control from analysis of the defects discovered.

Diffraction method—Radiography's most powerful tool may well be the X-ray diffraction method. This science is now recognized to possess importance for routine inspection. It seems that every substance, and every condition of that substance, is "finger-printed" by its X-ray diffraction pattern. Thus, if an X-ray beam is passed through a crystal of the substance, the beam will be bent,



The supersonic method of detecting flaws (measuring echoed sound waves) was given impetus by the exigencies of war, is peculiarly suitable for inspecting pieces of great depth—or extremely thin layers.



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a manufacturer of Radio Equipment who has found that DIMENSO's amazing 3-dimensional effect gives his product a long wearing metal-like protective coating.



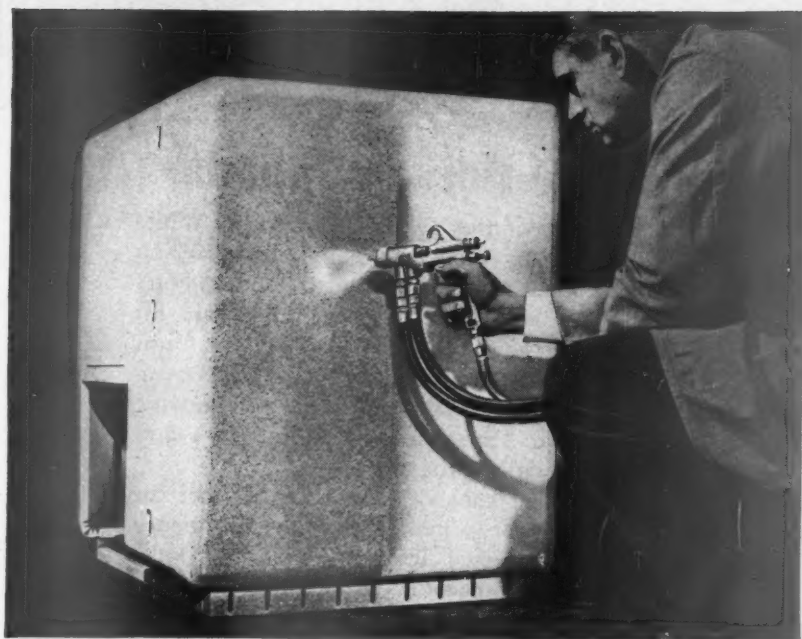
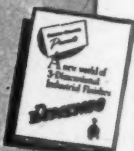
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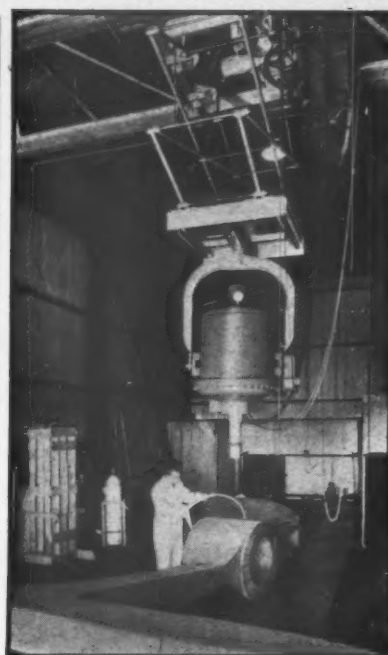
The Canadian Bank of Commerce has met the banking needs of White Horse since its branch there was established in 1900. With 500 other branches across Canada, it can meet *your* Canadian banking requirements, too.

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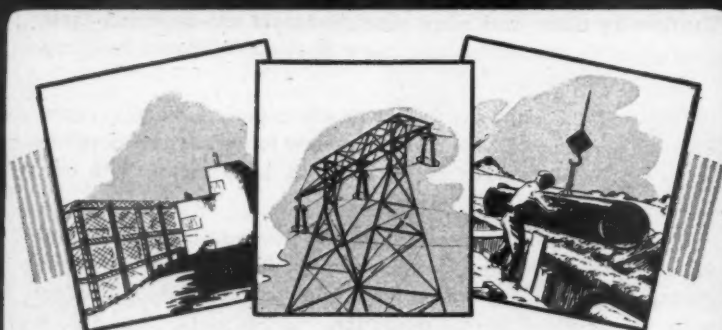
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Suspended from a rail crane by an intricate focusing rig, a million-volt X-ray unit—one of many types being used by industry—takes a test photograph of a giant casting at Pittsburgh's Columbia Steel Casting Co.

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or redirected, in a series of rays whose separation and intensity are characteristic of the material.

Patterns are different when the material has received dissimilar treatments—rolling, forging, heat-treating. Thus, the competent analyst looks at the pattern, compares it with a standard and knows immediately what the material is and what has happened to it. Difficulties in processing control can therefore be traced and the equipment or procedure adjusted to reestablish desired quality.

Supersonic inspection—Every nondestructive test has its advantages and limitations. X-ray is limited in penetration (about 12 in. in steel). Military authorities had to have a method for finding flaws at greater depths. The principle of the rail-car detector of flaws in railroad rails was expanded. Energy in the form of a supersonic beam (sound waves above the audible level) is directed into the test part. Reflections or "echoes" are picked up from the back face of the part and from any flaws in the part of the beam. These reflections produce "indications" upon an oscilloscope screen.

Means are provided to measure the depth of the flaw below the surface—to depths as great as 28 ft. Flaws as small as 0.001 in. in diameter have been found at shallow depths; a $\frac{1}{8}$ -in. flaw can be detected at 10-ft. depth. Cur-

rent applications are: inspection of forged gas-turbine blanks for dangerous voids or porosity; compressor shafts for incipient service cracks that would lead to wreckage of machine and factory; die blocks and molds for porosity in the region of surfaces to be machined and polished.

But there is another and distinct field for supersonic inspection—the finding of separations or thin pipes in thin materials like sheet steel, steel plate, laminated materials, plated metals. Separations as thin as 0.001 in.—beyond the range of other methods—can be found. Equipment is made for mill-type installations and for hand insertion between the detecting heads.

Magnetic-particle inspection—Flaw detection would not be complete without a means for finding nonvisible cracks, inclusions, and pores at or near the surface of partially or completely machined parts. Magnetic-particle and fluorescent-penetrant methods (BW—Apr. 14 '45, p48) have been highly developed for this purpose. In the first, the object is magnetized, and finely divided magnetic particles are dusted on it, or a solution containing them is flowed over the piece. Discontinuities are revealed by a build-up of particles. Defects in complicated pieces like gears and splines are more easily found if magnetic particles with fluorescent additions are used. The component is viewed under "black light." Small or shadowy indications are immediately revealed by the glowing particles.

For materials that cannot be magnetized, the fluorescent penetrant process was devised. When the liquid seeps into a crack it carries with it a highly fluorescent material which reveals the presence of discontinuities when the part is examined under ultraviolet light. Many defective pieces which would otherwise escape detection are thus caught and rejected in advance of assembly.

The magnetic-particle and fluorescent-penetrant processes are best used for inspection of semifinished and finished parts. They serve to point out material which fails to meet specifications through presence of stress-concentration points at or near the surface. And when properly correlated with manufacturing processes, these methods tighten quality control and reveal weak spots in grinding, heat-treating or machine techniques.

Magnetic-analysis inspection—A method less critical and faster than magnetic-particle inspection is required to detect defects in "raw stock" prior to machining: namely bars and tubing used in quality goods like aircraft parts. As the bar or tube is passed through a magnetic head, the existence of a defect is shown by a change in the electrical characteristics of the equipment. Indications

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A basic part of the plan is a series of 34 Cost-cutting Cards—a development of the valuable Disston Conservation Control Cards, more than a million of which were distributed throughout industry during the war. Each card covers a single type of tool, lists typical troubles and failures, explains the causes, tells how to correct them, and recommends the procedure to follow in cutting materials of various kinds.

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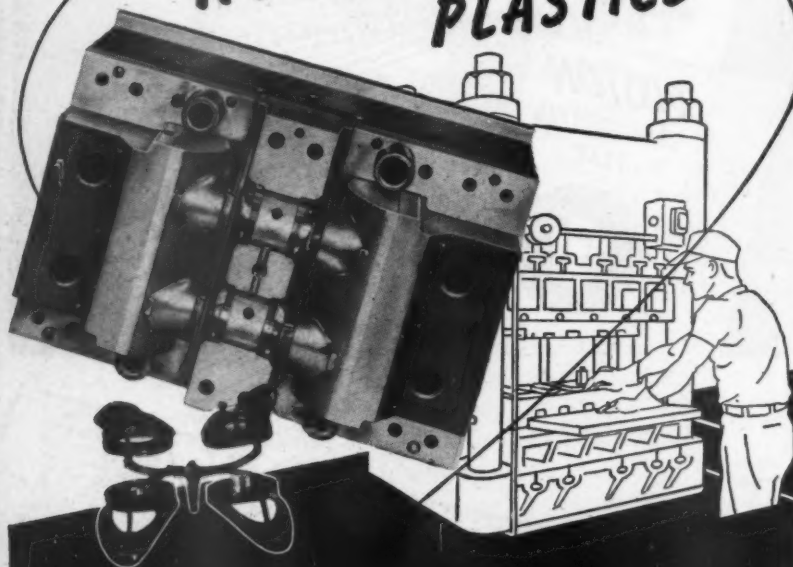
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● One of the important jobs being done by Stainless Steel is the protecting of highly polished plastics mold cavities against corrosion.

Some plastics are highly corrosive, could quickly ruin the mirror-like surface of a mold. Then too, the high cost of chrome plating is eliminated where Carpenter Stainless is used.

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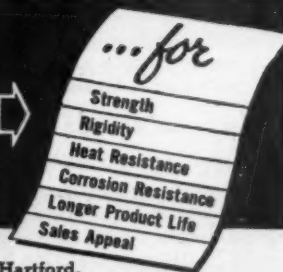
can put the corrosion resistance and high physicals of Carpenter Stainless to work... and you can do it at a saving. Ever since the days when Stainless was first developed, we at Carpenter have been looking for—and constantly finding—new ways to help cut costs where it is used. Put our "know how" to work on your Stainless problems. You'll find that it really pays.

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can be made to appear on a meter or oscilloscope. Seams, splits, laminations, inclusions, cupping, and cracks can be detected even though the ferrous or nonferrous metal is passing through the magnetic head at speeds of 100 ft. to 120 ft. per minute. Most of these bar and tube checkers are presently installed in steel mills, and an extra charge is made for magnetic analysis inspection. However, certain producers of quality goods are now licensing the machines, because their inspection requirements are too severe to be handled in mill-type operation.

In a variation of this principle, machined parts can be inspected for faulty heat-treatment. Here a standard part is placed in one electrical coil, the production piece in a second coil. If there is no indication on the oscilloscope screen, the parts are alike. But if a characteristic indication is obtained, the inspector knows immediately in what respect the test piece is defective. By this method and other nondestructive tests appropriately used, one manufacturer has cut rejections from 10% to 0.1% in less than six years.

The magnetic-analysis comparators serve another purpose: to segregate material by analysis. For example, steel bolts of different analyses were mixed in manufacture, then heat-treated. Those with too little carbon content to harden properly could not have been separated economically from the hardened bolts by any other method. With automatic feeding devices, more than 100 pieces per minute can be inspected, and the defective pieces thrown out.

Wall-thickness gages—In many fields it is necessary to measure the thickness of pipe and pressure vessels, even those containing fluids—but only one side is available. For such purposes, an instrument containing radium salts is placed in contact with the metal. Gamma rays emitted by the salts penetrate the metal, are reflected by the back face. Emergent rays are picked up by a radiation detector. Tiny electrical impulses are transmitted to an amplifier and measuring circuit, calibrated to the metal under test. A reading can be taken in 25 sec.; the accuracy of thickness measurement up to $\frac{1}{2}$ in. thick is about 3%.

A second instrument has a probe which is pulled through nonferrous condenser tubes and similar tubing. By an electronic principle, internal defects—pin-holes, cracks, corrosion, and erosion—are detected and recorded on a strip chart. With this device oil refineries are finding which tubes are defective, pulling out only the bad tubes, and salvaging these for shorter condensers.

Film-thickness gages—Coatings like paint, plated finishes, anodic finishes, porcelain enamel must be checked for thickness as a quality control measure in manufacture of many products. To

measure the thickness of the coating without cutting through is the function of electrical film-thickness meters. Such readings may be made with suitable accuracy on coatings applied to magnetic and nonmagnetic metals. Although light in weight, and thus easily carried to the work, such meters are readily used in production inspection operations.

Spectrographic inspection—Often a manufacturer wants to know the exact composition of incoming material—castings, forgings, bar stock (BW—Jun. 1 '46, p85). Offgrade analyses can easily cause much trouble in heat-treatment and other processing operations. Or if a foundry is maintained, a quick check of composition is desirable as compared with tedious chemical analysis.

For these purposes, there has been considerable improvement in spectrographic equipment. "Flat surface sparking" is a late development. A small flat spot on the object (either a rough or finished piece) is used as one electrode. The spark is caused to jump the gap to another electrode. Light waves emitted by the burning metal constituents form a spectrum, which is recorded on film for easy analysis. As with X-ray diffraction the spectrum is a fingerprint of the material.

The X-ray diffraction process also serves in spectroscopic inspection. A "spectrum" of X-rays is scanned and a trace charted on a recorder. The strip record gives the constituents of the sample and their relative amounts. Such equipment can be used for routine inspection or in basic research.

• **Few Declared Surplus**—No one non-destructive test will cover all requirements to be found in a given plant. The advantages and limitation of each should be examined, and tests finally selected that will give an economical, practical control over quality. Tests cost money, but it is significant that few of the installations made during the war have been declared surplus.

COAL MINE CLOSED

Dyna mine at Daylight, Ind., believed to be the world's longest-slope shaft coal mine, has been closed as an uneconomical operation by the Ingle Coal Co. The shaft was opened last January but never gained full production.

Company officials blamed the closing on mining obstacles, such as salt water and unfavorable roof conditions; government restrictions; and "too much John L. Lewis." After the recent United Mine Workers' contract was drawn, the company decided to write off its \$300,000 Dyna investment.

From the mouth of the shaft, which looks like a cave entrance, to the point where coal digging began, Dyna mine has a 1,725-ft. concrete tunnel approach.



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volves additional cost of only a small fraction of a cent a letter.

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STRONGER...**



Firestone special rayon cord is stronger and cooler-running because the rayon fibers are locked together by the Firestone Safti-Lock process, then Gum-Dipped and calendered with Vitamic Rubber containing Vitalin, the rubber vitamin. Firestone Safti-Sured Construction welds all of the body plies and the tread together into an inseparable unit of greater strength. These patented features give EXTRA PROTECTION AGAINST BLOWOUTS.

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60% MORE
NON-SKID
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The new Safti-Grip Tread is especially designed for the new rayon cord body. It has up to 60% more non-skid angles for greater traction and EXTRA PROTECTION AGAINST SKIDDING AND SIDE-SLIPS, assuring EXTRA SAFETY.

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THE WINNING CARS
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THE thrilling Indianapolis 500-mile Sweepstakes is equal to 50,000 miles of ordinary driving. This year's race was the first since the war. And, for the twenty-third consecutive time, Firestone Tires were on the winning car.

Imagine the punishment those tires took as they pounded and pulled over the grinding, tearing pavement at speeds faster than you ever drive! Could you ask for more convincing evidence of extra safety and extra wear? Could there be any greater

proof of the superiority of Firestone's patented and exclusive construction features? What a triumph for Firestone Research, for Firestone "know-how," for Firestone precision workmanship!

When you buy new tires, remember that your life may depend on their safety. Why take chances when Firestone De Luxe Champions cost no more than ordinary tires? See the new rayon cord Firestone De Luxe Champion Tires today at your Firestone dealer store or Firestone store.

*Rayon cord bodies in size 6.50 and larger, extra-strength cotton cord bodies in smaller sizes until more rayon is available.

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NEW PRODUCTS

Built-In Gas Range

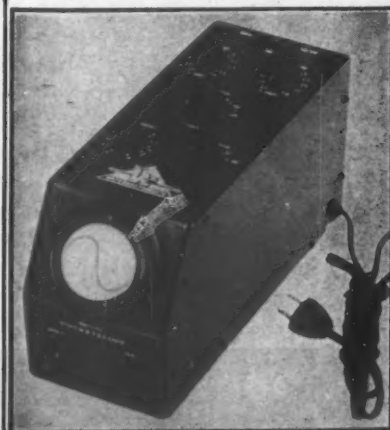
Designed to fit flush to wall, cabinets and working surfaces at each side, the Western-Holly gas range will soon be in production by Western Stove Co., Culver City, Calif. An automatic venti-



lator is concealed in the cabinet above the range. Top cooking surfaces are arranged four-in-line to facilitate venting and as a safety feature (BW—Jun. 1'46, p71). The "Tempaplate" burners, said to provide even heat distribution, incorporate a new design in heating elements. The stove has an extra-large baking oven and a special meat oven for broiling and barbecuing.

Lightweight Oscilloscope

Embodying the functions of the conventional oscilloscope, the "Pocket-scope" weighs only 5½ lb., is 6½ in. high, 3½ in. wide, 10 in. deep, and it occupies less than 0.15 cu. ft. of space. Manufactured by Waterman Products Co., Philadelphia, the device incorporates a cathode ray tube, vertical and horizontal amplifiers, linear time base oscillator, synchronization means, and



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The ability of Reliance V★S Drive to provide adjustable-speeds for cargo hoists and other types of ship equipment removes the barriers to modern, all A-c. ship design. And here, as everywhere on land, V★S can be depended on to speed operations while cutting costs.

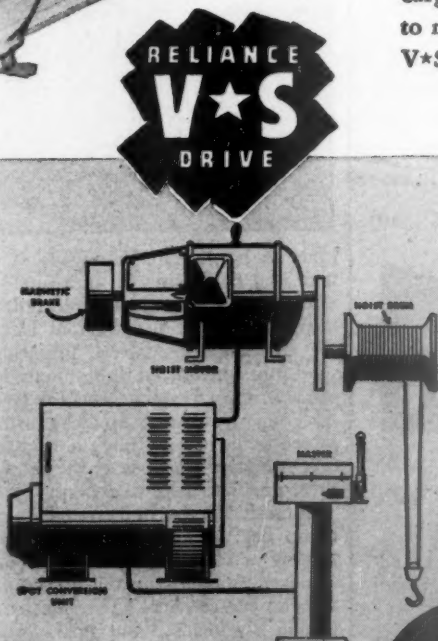
V★S, the *All-electric, Adjustable-speed Drive operating from A-c. Circuits*, offers complete mastery over production processes. Besides an infinite range of truly stepless speed changes, it gives you the quickest starting and stopping ever, reversal at any point desired, maintenance of proper tension and many other specialized advantages. And all with automatic or manual control from nearby or remote stations. Write today for Bulletin 311—or phone your nearest Reliance office.

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GENERAL MOTORS NEW PLANT SITE IN LOS ANGELES...

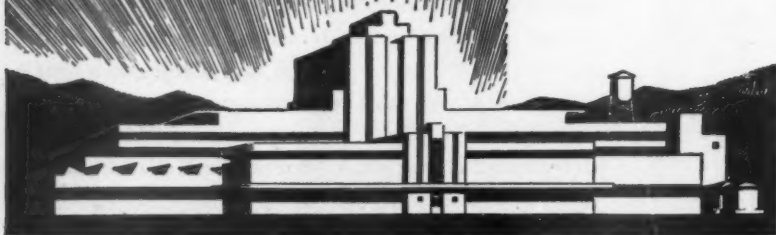
Purchase by General Motors of a 125 acre site in San Fernando Valley—one of the ten industrial areas in Los Angeles—for a new Chevrolet assembly plant is further evidence of the strong pull that Los Angeles exerts on American industry.

With this latest addition, Los Angeles assembles 13 makes of cars against 14 for Detroit. More than ever, Los Angeles is the Nation's Number Two automobile center.

All industry can profit by the example of the highly competitive automobile industry. These companies* found it desirable to locate branch plants in Los Angeles because this city offers more in markets...in quantity and quality of labor...and in preferred living and working conditions than any other city in the West.

Los Angeles is moving ahead with seven-league strides but there still is time to get in step with our industrial progress. Let us tell you the whole story.

*The Los Angeles metropolitan area now includes facilities and plans for assembling these makes of cars: Buick, Chevrolet, Ford, Frazer, Kaiser, Lincoln, Mercury, Nash, Oldsmobile, Pontiac, Plymouth, Studebaker and Willys-Overland.



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self-contained power supply. It indicates in two independent dimensions—vertical and horizontal. As used normally, the vertical dimension is amplitude, and the horizontal may be either amplitude or time. The cathode ray tube is magnetically shielded, and a telescoping light shield permits observation in places of high light intensity. Controls and terminals are placed for easy adjustment. Vacuum tubes used are of the miniature glass type.

Plastics Folder

With the "Thermofold" plastic folding machine built by Plastics Equipment Division, Taber Instrument Corp., 111 Goundry St., No. Tonawanda, N. Y., plastic sheeting from 0.005 to 0.020 inches in thickness can be folded into a "U" type, 180-deg. fold, with the sides tight together, the manufacturer reports. The machine enables the average operator to produce 700 formed



folds an hour. Rate of output may be increased by folding in multiples.

By using thermostatically controlled heat, the unit forms the fold by actually molding the material into the desired fold, and is said to eliminate faults of creasing or bending, such as tearing, cracking, or opening up. The machine is reported to be fully adjustable to accommodate all types of thermoplastic sheeting, sizes and thicknesses of fold.

Hand-fed and foot-operated, the machine has an automatically controlled folding cycle. Light construction is achieved through the use of aluminum and fabricated steel. The mechanism, completely inclosed but readily accessible through hinged end doors, requires little servicing because it has prelubricated ballbearings and oilless bushings. Streamlining eliminates corners and sharp edges, and simplifies cleaning. Operating accessories include an electric

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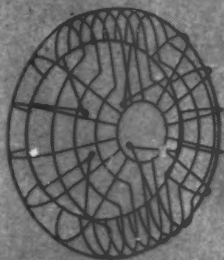
Attention Getters

CHICAGO WIRECRAFT* Display Racks

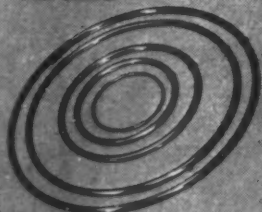


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Naturally, proper wire for the job is important . . . reason enough why special Keystone wire is used. Regardless of the gauge, analysis or finish of wire required, Keystone can normally supply it.

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switch; two indicator lights; dial-type thermometer for registering temperature of the heated folding blade of 16-in. capacity, and adjustable thermostat to regulate folding blade temperature.

Portable Charger

The new, fast battery-charger designed for automotive, farm, construction, and marine use, and manufactured by Thomas A. Edison, Inc., Kearny, N. J., weighs only 43 lb. Simple design, plus the use of 16-gage die-stamped aluminum for the housing, $\frac{1}{4}$ -in. aluminum for the chassis base, a glass-insulated transformer, and a selenium rectifier, give the unit portability. The charger is designed to deliver 80 amperes to a 6-volt battery. It will operate on 105- to 125-volt, 60-cycle, single-phase alternating current.

Oil Burner Clutch

An automatic clutch, operated by centrifugal force, is said to accomplish fuel savings ranging from 10.9% to 24.5% in new Gilbarco burners made by Gilbert & Barker Mfg. Co., West Springfield, Mass. The clutch is mounted on the main-drive shaft between the blower and the oil pump. In conventional design, when the thermostat calls for heat, all units—oil pump, air blower, and ignition—start simultaneously. Fuel oil reaches the combustion chamber before the fan reaches full speed to deliver adequate combustion air.

With the "economy" clutch, the starting of the burner motor starts the air fan, and when the fan reaches speed, the clutch engages and fuel pumping starts. It is claimed that this delayed action insures an abundance of air when the fuel and air mixture is ignited, thus eliminating smoking and sooting. The clutch action is reversed on shut-off, with the fuel pump stopping first.

THINGS TO COME

A gauze-like product, developed from seaweed (BW-Sep.18 '43,p64), may be effective in the control of bleeding during surgical operations. Several methods were developed during the war, using thrombin (extracted from human or animal blood) and oxidized cellulose. Although it has been known for some time that crude powdered alginic acid from seawater is hemostatic, this development has resulted in a material in a form suitable for sterilizing and said to be nontoxic and nonirritating to the tissues. The gauze-like material is left in the body and is ultimately absorbed.



- 1.** Like homing pigeons* the travelers come
Straight to the Statler for food and rest.
As they circle to land you can hear them hum,
"At Statler you really are a guest."

*You can also reach Statler by plane, bus, train, boat, automobile, or scooter.



- 2.** They reach their rooms, when they've shed their wings,
And, just to try it, they bounce on the bed.
Whee!—a mattress with over 500 springs*
Means a good night's sleep is just ahead.

*Let's be accurate. 537 coil springs make every Statler mattress super-comfortable!



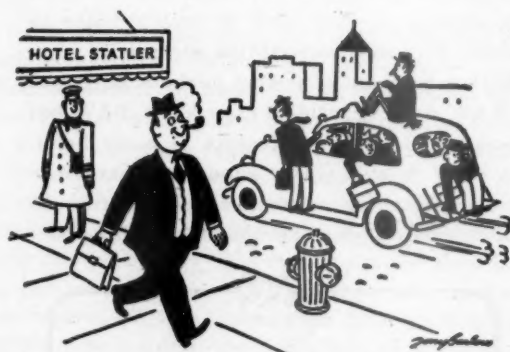
- 3.** They sing in their bath (it shows they love it),
Praising Statler with tuneful howls . . .
The steaming hot water, there's plenty of it . . .
The lather soap . . . the piles of towels . . .*

*And the sterilized drinking glasses, and the ice water that's always on tap.



- 4.** At dinner they find their favorite dishes,
From Boston beans to a smooth Welsh rarebit*—
Delightful, delectable, and delicious—
For excellent meals are a Statler habit.

*Plenty of really fresh vegetables and tasty desserts on Statler's menu, too!



- 5.** When the brief-case brigade starts out next day,
Not a one need become a "taxi-battler,"
The business district's not far away*—
Is it any wonder they all stay Statler?

*Statler Hotels are conveniently close to shopping and theatrical districts, as well.



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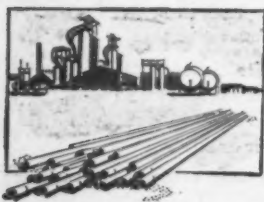
HOTEL PENNSYLVANIA \$3.85	HOTEL WILLIAM PIRN \$3.85
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We refined the idea for refineries . . .



THIS little trick helps Rosalind determine in advance how materials will react to heat. It's practical and simple . . . but quite inaccurate. Foreseeing the behavior of alloy

steel tubes in the metal-torturing temperatures of modern refineries and other chemical processes calls for much more complicated and exacting tests, but time was when *guesstimates* applied there, too.

Today, the performance, endurance, and safety of seamless and welded tubing can be closely predetermined. And in the refinement of laboratory methods for this purpose, B&W has long been a leader.

One B&W step was the development of a small testing unit (it could fit on Rosalind's ironing board) that would pre-check tube steels for changes in hardness and structure under heat. This "gradient bar test" and others devised by B&W to determine reactions to corrosion and pressures, have enabled B&W to develop tube analyses for every type of high-pressure, high temperature service—and to match tubes to specific jobs with prescription precision.

Such refinement of testing methods is typical of B&W research. Old in experience, B&W has pioneered many such advances in many fields. Yet B&W is still young enough to have new ideas . . . ideas for engineers of *all* industries, in connection with present problems or future plans.

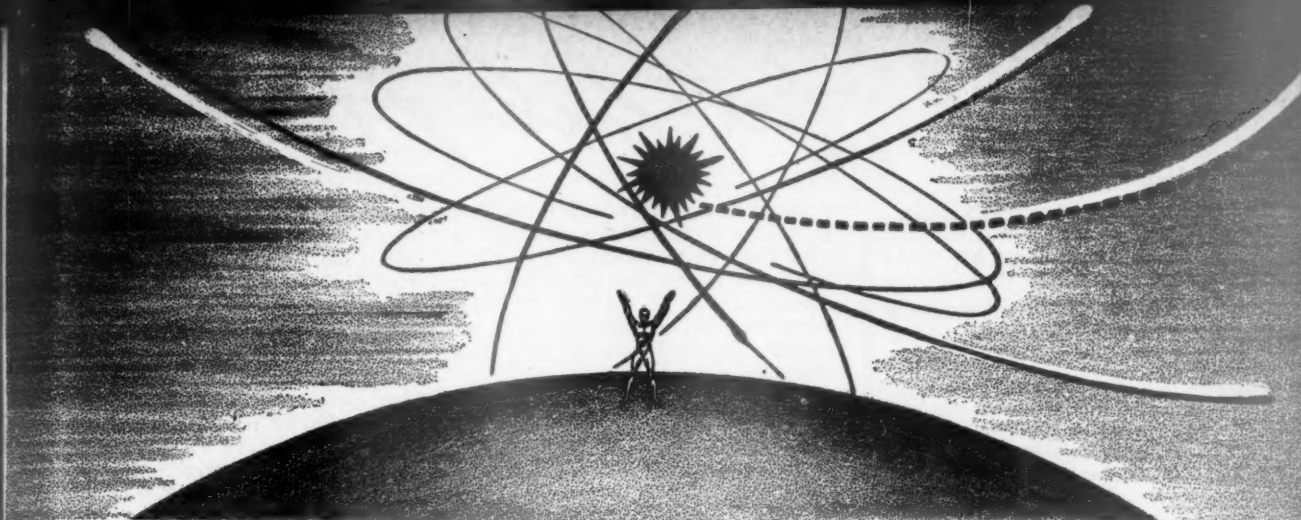


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MAN ^{VS} ATOM - YEAR 1

WHEREIN WE SIGNALIZE THE FIRST ANNIVERSARY OF THE ATOMIC AGE, CONSIDER THE ALTERNATIVES INHERENT IN BOTH GOOD AND EVIL POTENTIALITIES OF NUCLEAR FISSION, THEN VENTURE A GLIMPSE INTO THE FUTURE

A YEAR AGO, July 16, 1945, at Alamogordo, New Mexico, man created the first atomic explosion. Most impressive events diminish in stature as they recede in time. This one grows bigger with each passing day. It truly marked the beginning of a new age.

As Year 1 of the Atomic Age ends and Year 2 begins, we are engaged in three portentous projects.

At Bikini Atoll we are detonating the fourth and, possibly, the fifth atomic explosions in the history of the world.

At Oak Ridge, Tennessee, we are building the first atomic energy plant for peaceful purposes.

Most important, in New York we and all the other United Nations are engaged in the first attempt to subject atomic energy to international control. Literally, the fate of the world hangs on this attempt.

As this introduction is written, the United Nations Atomic Energy Commission has just begun its work. People everywhere pray for its success—for their own sake, but even more for their children and for their grandchildren. If this Commission fails let everyone everywhere be warned: the world has taken a step toward destruction.

As we enter the second year of the Atomic Age, the nations of the earth are embarked on an atomic armaments race. There is no blinking that fact. We have had official notice served on us. Therefore, we must understand that unless the United Nations Commission can

arrest the drift of events, we are moving toward a horrible war. The Commission must succeed.

The American delegate, Mr. Baruch, has brought to the Commission an ably thought out plan. It would internationalize nuclear science, and release for mankind the beneficent applications of atomic energy. But it would "control" atomic bombs only to the extent of giving the world brief warning of any nation's preparation to use them, so that we might have foreknowledge of disaster.

Therefore, the real and enormous task before the world becomes clear. We must end war. No other control of atomic weapons exists. If war comes, atomic weapons will be used. If they are used, our children who survive will curse their fathers. Understanding the consequences of failure, we *must* succeed.

Because we cannot succeed without knowledge, I have asked my associates at McGraw-Hill to condense into the following pages what we know at the close of Year 1 about this great new atomic force—its basic science, its possible uses and its political repercussions.

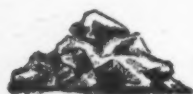
James H. McGraw, Jr.

President, McGraw-Hill Publishing Co., Inc.

This Fateful Atom...

1 ORE TO U235

Only 0.7% of natural uranium is U235



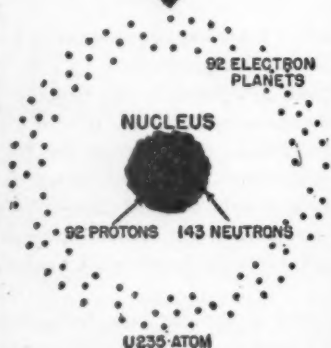
URANIUM ORE



140 LB
NATURAL
URANIUM

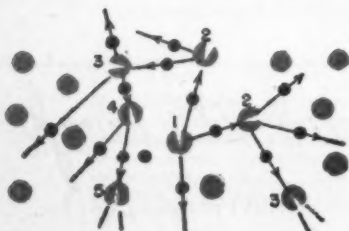


1 LB U235 = 0.7%



2 CHAIN REACTION

Fragments from earlier nuclear explosions smash other nuclei



LOOKING BACK twelve months to the birth of Year 1, Atomic Age, we begin to sense the majestic import of the atomic bomb that blasted the naked desert at Alamogordo, N. M., on July 16, 1945. There man first shattered atoms in an explosive *fast-chain* reaction. Then came Hiroshima and Nagasaki.

In every case the fateful atom was either uranium 235 (U235), or plutonium derived from the action of U235 on U238. Every pound of U235 atoms split in these unprecedented blasts yielded the energy of 11.4 million kilowatt-hours, or 1400 tons of coal—slightly more for plutonium.

No matter where one mines uranium ore, the purified natural uranium (Fig. 1) always contains 99.3% of the "garden" variety U238, and a mere 0.7% of the precious U235.

An atom is like our solar system. The central sun is the nucleus—a bunched mass of protons and neutrons, each weighing one unit. The planets are electrons. Each proton has one plus electrical charge—each electron an equal negative charge. There must be as many negative electron planets as positive protons in the nucleus. This is also the "number" of the atom. Neutrons have no charge, but add weight.

The atomic number of uranium is 92 because the uranium atom always has 92 nuclear protons and 92 electron planets. The isotopes U238 and U235 differ only in the number of neutrons; U238 has 146 neutrons, and weighs $92 + 146 = 238$ units. U235 has 143 neutrons, and weighs $92 + 143 = 235$ units.

Ordinary chemical reactions, such as TNT explosions, release only a fraction of

the modest energy of the whirling electrons in the outer atom. Nuclear reactions unlock the immensely greater energies which bind together the nucleus.

Even the gentle tap of a slow-moving neutron bullet will split the atom of U235 or of man-made plutonium into two medium-weight atoms, yielding also one to three spare neutrons plus energy. Thus these *fissionable* materials supply both their own bullets and a highly sensitive lot of high-explosive targets—a perfect setup for a *chain reaction* (Fig. 2).

Chain reactions work like chain letters. Neutrons from one nuclear explosion hit and explode other nuclei. But, since atoms are mostly open spaces a chain started in a small block of U235 or plutonium quickly dies out because most of the released neutrons escape from the block.

The bigger the block, the smaller will be the percentage of escaping neutrons, and the more left to split other nuclei. When the block is rapidly built up beyond a certain secret size the fragments of 1000 nuclear fissions split many more than 1000 additional nuclei. Then fissions multiply geometrically, and the block disintegrates with explosive speed and violence—as in a bomb (Fig. 3).

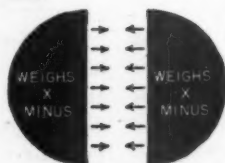
This bomb explosion is a fast-neutron chain. For economy and ease of control, uranium piles for the gradual release of nuclear energy for commercial purposes will normally use a lean fuel—that is U235 or plutonium diluted with U238, thorium or other less costly materials.

To maintain a chain reaction such piles must be large and artificially stimulated by using carbon blocks or some other *moderator* (Fig. 4) to slow many of the neutrons. Slow neutrons make more hits than fast neutrons because there is more time for them to be swerved from a straight path by the attraction of nearby nuclei, as shown below.

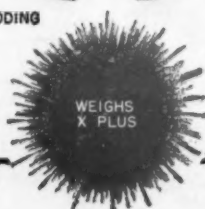
3 WHY BOMB EXPLODES

When block of rapidly assembled U235 passes secret critical size it explodes spontaneously

HARMLESS



EXPLODING



4 SLOW NEUTRONS MAKE MORE HITS

A slow neutron is more easily swerved from a straight line



can Serve Man...

THE FATEFUL U235 ATOM can serve man as a new, compact source of heat energy for power generation, comfort heating or industrial processing. Peacetime applications of atomic energy will use dilute U235 or plutonium as a "fuel," mixed with carbon or some other moderator to slow some of the neutrons and thus keep the chain reaction going.

The diluting agent may be either U238 or thorium, or both. These will do double duty, because neutron bullets convert U238 into the energy-yielding plutonium, and thorium into U233, which may prove equally serviceable.

Thus the commercial piles of the future will "burn" U235 to make other atomic fuels, plutonium and possibly U233, which in turn will deliver heat energy to the pile. In that way it will be possible to get from the pile far more heat than the equivalent of 1400 tons of coal for each pound of U235 split. This highly attractive prospect will speed the day when nuclear energy can compete with coal.

While already mechanically obsolete, the piles making plutonium for bombs at Hanford, Wash. (Fig. 1) reveal the basic principle on which future piles for power and heat will operate. The heat now wasted in vast quantities will be put to work. The plutonium, now removed for bomb manufacture, will be returned to the pile (or left in) as supplementary fuel.

ATOMIC POWER

The possible everyday applications of nuclear heat pictured in Fig. 2 have been recognized from the very first day of the Atomic Age. Year 2 will see the building of the world's first atomic power plant (a pilot plant) at Oak Ridge, Tenn.

Beyond question such installations will produce power, but it may be years or decades before they prove economical. To compete with conventional plants the piles must first be redesigned to run at temperatures high enough for good power-plant efficiency. Also the techniques of operating piles by remote control through the heavy radiation screens must be radically streamlined.

The Hanford piles run on natural uranium containing only 0.7% of U235. The typical commercial atomic power plant of the future will use more than 0.7% of U235 or plutonium, but less than 50%. This will avoid both the low efficiency of the too-lean mixture and the excessive fuel cost of the rich mixture. It will permit piles of moderate size and take maximum advantage of U238 and thorium as potential sources of plutonium and U233.

One should not expect U235 to replace coal generally in this generation, although a few central power stations and ships will

try it out before Year 10 of the Atomic Age. Plants far from traditional sources of fuels may turn much sooner to uranium and thorium as concentrated heat sources, that may easily be transported even to remote corners of the earth.

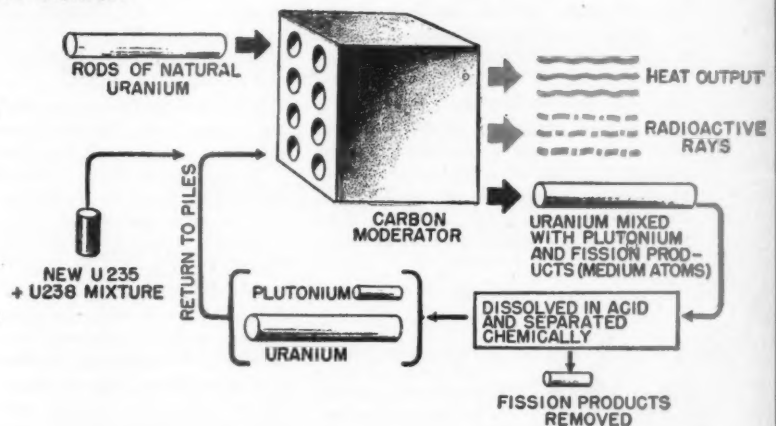
Atomic power, in forms now known, is impracticable for automobiles and small airplanes, because of the large initial investment in uranium and the need to carry 50 tons of shielding to protect riders and pedestrians against the deadly radioactivity accompanying nuclear fission.

RADIOACTIVE ISOTOPES

More immediately important than the heat and power applications of nuclear energy are the services that the radioactive byproducts of pile operation can render. Because these materials act chemically like their ordinary non-radioactive cousins, but can be followed and detected easily, they are expected to play tremendously vital parts in medicine and biology. For more details, see the last page of this section.

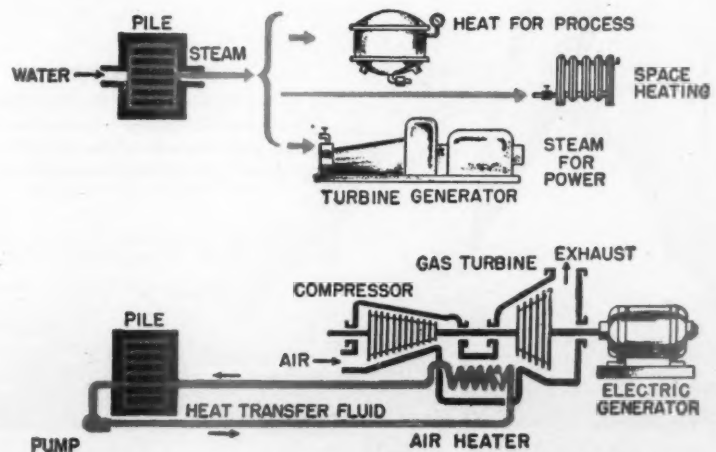
1 SLOW-NEUTRON PILE

Can make plutonium for bombs—or heat for power, process and comfort



2 PRACTICAL APPLICATIONS

Include steam for turbines, process and comfort heating—also heat for gas turbines



or Destroy him . . .

URANIUM 235 and plutonium are now man's slaves. They will build or destroy as he orders. Man dreads this vast force only because he distrusts himself. War is proof that man in the mass has never achieved self-control. He has always sought better weapons; yet the perfect weapon now brings him no satisfaction for he sees in the atom bomb his own destruction as well as that of his enemy.

The ultimate benefits of nuclear energy may well surpass its present terrors, but the terrors are here now in awful dimension, and man must face them. He must pay this price for unlocking the wealth of the inner atom.

ATOMIC BOMB

This page, then, is about the atomic bomb. Nothing will be said here that is not either a certified scientific fact or a conclusion shared by the majority of the leading scientists, engineers and statesmen who have studied the matter.

As already explained, an explosive nuclear chain reaction spontaneously sweeps through a block of U235 or plutonium when the block is rapidly enlarged beyond a certain "critical" weight X. That weight is still a military secret; the official Smyth

report vaguely suggests that it is more than 4 lb and less than 200 lb. Each piece of U235 in the dormant bomb must weigh less than X. At the desired instant of explosion the bomb mechanism assembles these pieces rapidly into a single piece considerably heavier than X.

The explosion itself drives the U235 pieces apart, thereby quenching the atomic conflagration before all the atoms are split, so the bomb efficiency is far less than 100%. For each pound of U235 (or plutonium) atoms actually split, the bomb releases the energy of 1400 tons of coal.

This explosion is mainly ordinary heat at work in unprecedented concentration. Bomb metals become incandescent vapor millions of degrees hot. This, and the enveloping sphere of glowing air, radiate a blinding flash that chars human flesh at half a mile and blisters at over a mile. There is a destructive shock wave (sound) and a second-long hurricane of unimaginable force — the outrushing of the expanding heated air. Deadly neutrons and gamma rays speed out from the bomb.

A single atomic bomb killed about 100,000 at Hiroshima. Fewer died at Nagasaki only because the circle of potential destruction included much vacant land. Bombs ten times more powerful can be made by the thousands in any major industrial country with the plants and the know-how. One bomb could saturate Minneapolis or downtown Manhattan.

Many experts estimate that a complete set of American atomic "secrets" and blueprints might save a foreign power two to three years at best in its race for atomic arms. With no help at all from us, any advanced industrial nation can, in five to ten years, acquire the raw materials, the plants, the know-how and enough bombs to knock out the big cities of any other country overnight. In Year 2 of the Atomic Age this arms race is already on.

It will not fail for lack of raw materials; every country has lean ores worth working for bombs.

THE CHEAPEST DEATH

Cost need not deter, for the atomic bomb is by far the cheapest method of destruction ever devised. General H. H. Arnold estimates that atomic bombs can be manu-



A single improved atomic bomb can devastate ten square miles of city

factured and delivered for less than \$500,000 per square mile of destruction.

Don't be misled by the two billion dollars America spent on a project that dropped only two bombs on the enemy. New plants can be built at a fraction of wartime cost, and the investment spread over thousands of bombs, not just two.

NO DEFENSE

So the bombs can be made in ample quantity and paid for, but can they be delivered? The answer is: "Yes; by the time the bombs are ready they can be delivered anywhere and overnight." If the defenses of the target country are weak, piloted planes can get through in ample number. Ten percent would be enough.

For more effective delivery radio-steered pilotless planes and rockets can carry the atom bombs faster than sound. Such weapons will be almost untouchable by either antiaircraft artillery or manflown fighters.

Greatest threat of all will be the transoceanic rockets. The German V-2 rocket, which never once was stopped by Britain's defenders, points one way. It needs only transatlantic range (with atomic propulsion) and an atomic bomb in the nose. Forty-six feet long, loaded with 7500 lb of alcohol fuel and 11,000 lb of liquid oxygen, the V-2 of World War II rose 60 miles in the air and arced 200 miles in five minutes to deposit one ton of TNT in London.

Seeing so many strange things come to pass, the man in the street cannot distinguish between possible miracles and the impossible variety. From the very start of the Atomic Age he has been hoping for a "ray" that will explode the atom bomb far off. Competent scientists and engineers say that cannot be.



There is no known defense against the atomic rocket attacking at mile-per-second speed

The only way to bring down a 3500-mile-per-hour rocket at a safe distance is to chase it with your own 4000-mph rocket. You can't win at this game often enough to establish ironclad protection.

The only specific defense against the atomic rocket known in Year 2 of the Atomic Age is to disperse all cities and put key industries underground. This would be very costly in time, money and national morale.

MORE AND BETTER BOMBS?

Some will ask whether the U.S., as the most powerful industrial nation, could not build more and better bombs and carriers than any other nation. Probably yes, but there is still no real security. If the "weak"

opponent has enough atomic weapons to destroy us once, what advantage is there in being able to destroy him twice?

Shooting first could protect us now, but not after the world is atomically armed. If we were to destroy the enemy's cities, we would probably miss his well-concealed and protected bomb magazines and rocket launchers. A few minutes later he could return the atomic fire. In brutal simplicity, that is the picture of future atomic war. Everybody loses.

At this point one grasps at another straw: "If everybody is to lose who would be so foolish as to start an atomic war? And didn't the Germans refrain from using gas for a similar reason?" Possibly yes. It may work that way. But in a world

atomically armed to the teeth some nervous finger may pull the fatal trigger.

ONLY ONE WAY OUT

Throughout history each new offensive weapon has called out its appropriate defense. But now the offense leaps centuries ahead in a single bound and the defense lies almost helpless everywhere, unless some technical protection, unknown as Year 2 begins, can be devised.

The situation is extremely dangerous. There is no clear way out except through some sort of international action first to stop the atomic arms race and, before it is too late, to hobble war itself.

Can it be done? Perhaps not, but there is no alternative except atomic chaos.

...so he faces the Atomic Dilemma..

THE NUMBERED statements that follow in somewhat logical pattern are too fateful to be accepted on anybody's say-so. Every reader should test them in the light of his own information and understanding.

The points below sum up the conclusions of the previous article — and these in turn reflect a great mass of thought and discussion among leading scientists, engineers and statesmen close to the problem. To an amazing degree they concur on both facts and conclusions. For authoritative statements of their line of thought, in detail not possible here, the reader should see the recent book, *One World or None*.

THE DILEMMA

Nations must either face the probability of an atomic World War III, which would surely be the most deadly in history . . .

Or, the experts propose, yield both atomic weapons and war potential to international authority backed by superior force.

What the Experts Say

1. In five to ten years any major industrial nation can make enough atom bombs to destroy all the major cities of any other country overnight.
2. This assumes no "secret" information or other help from us.
3. The necessary uranium ores will be at hand.
4. The cost will not be too high.
5. The bombs produced can then be carried thousands of miles by bombers, or by atomically powered guided missiles moving faster than sound.
6. There will probably be no effective military defense against such weapons.
7. Dispersing cities, and putting key industries deep underground, will give some protection if accomplished in time,

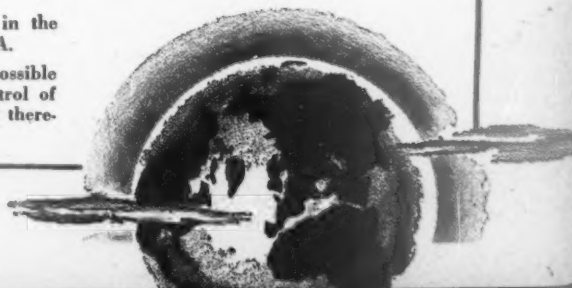
but at incredible cost in money and human discomfort.

8. In a world atomically armed, nations can probably protect their bomb stocks and rocket launchers from enemy assault.
9. If so, nation A can destroy the cities of any other nation B, after which B's rockets will destroy the cities of A. Shooting first will not win an atomic war.
10. This knowledge may not restrain the trigger finger of a suspicious power.
11. Having more and better atomic weapons than the other fellow won't help much if he has enough to destroy us. No use to kill a man twice or rebomb urban ruins.
12. Every nation is vulnerable in the Atomic Age, including the U. S. A.
13. National security will be impossible without (first) international control of atomic arms and (not too long there-

after) international control of all war potential, both backed by superior physical power.

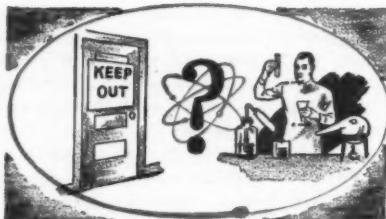
14. If action to this end is long delayed, it may become impossible to halt the atomic arms race already started.
15. At best, the necessary degree of international control, with some real delegation of national sovereignty, will be a revolution in human affairs. It may prove to be humanly unobtainable at this time. If so, men and women everywhere must face the probability of an atomic third world war—by far the most destructive in all history.

In this atomic age no nation can be safe through its own unaided might



...and the Great Debate unfolds

ATOM YEAR 1 has probably been marked by more debate on a single subject than any other twelve months in the world's history. Social, economic and political as well as purely technical issues have been pressing for realistic solution. Let us look at these issues and see where we stand:

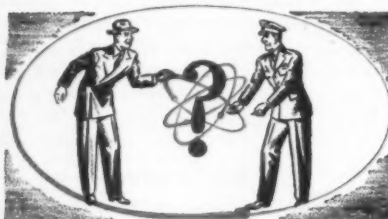


SECRECY VS. FREE SCIENCE

Throughout the first year of the Atomic Age hot debate has raged around "keeping the secret of the bomb." To prevent potential enemies from making atom bombs some have urged a complete black-

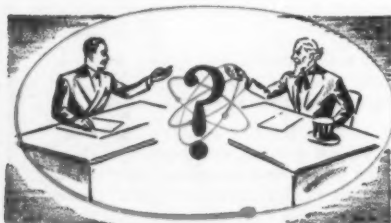
out of all phases of atomic energy — even of the scientific fundamentals of nuclear physics. Others have sought immediate and complete disclosure of all bomb "secrets," both scientific and technological. These have held that such information cannot be effectively hidden, that secrecy blocks progress and breeds wars.

A year of debate has brought the great mass of vocal opinion to this middle ground: (1) Ease restrictions on the exchange of basic physical knowledge. (2) Release for industry's benefit many of the devices and methods developed for the bomb project. (3) Hold tight to specialized information on atomic bombs and bomb-material production until international safeguards are fully operative.



CIVILIAN VS. MILITARY

Because the atomic bomb is the world's greatest weapon, the armed forces would like to control it. But because atomic energy can also be used for peaceful, beneficial purposes, civilian control seems equally essential. These conflicting viewpoints had their strong proponents before the Congress which finally reached a fairly satisfactory compromise in the Atomic Energy Bill of 1946, setting up a competent civil board with which the armed forces will have continuing liaison. As we go to press, just before Year 2 of the Atomic Age begins, this bill has passed the Senate, but there is still a question how rapidly it will be enacted into law.



PRIVATE VS. PUBLIC

Atomic energy is "too big" and "too hot" to be handled privately. It must be nationalized and internationalized. The questions are *how* and *to what extent*. Fortunately, as the "boxes" on these pages show, there are means that may attain reasonable safety against misuse of the atom, and still do so without public control of many "non-dangerous" applications.

DOMESTIC CONTROL AS PLANNED IN THE ATOMIC ENERGY BILL OF 1946

McMahon Committee Bill contains the following provisions.

Policy. Declares it the policy of the U. S. to develop and utilize atomic energy to improve the public welfare, increase living standards, strengthen competitive enterprise and promote world peace.

Organization. Establishes the Atomic Energy Commission (AEC) of five administrators to direct four divisions on research, production, engineering, and military applications—to work in liaison with three committees from (1) the armed forces, (2) outstanding civilians, and (3) joint Congressional representatives.

Production. AEC to own and operate (under management contracts with industry if deemed desirable) all facilities for the production of fissionable materials, such products to be distributed with their radioactive byproducts under license for private industrial and medical research.

Military Application. AEC to engage in development work and produce atomic bombs as directed by the President, to be delivered only on his order to the Armed Forces.

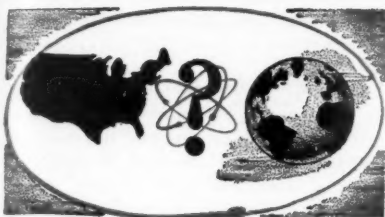
Industrial Utilization. Permits AEC to conduct research, design and manufacture equipment for atomic-energy utilization, license its use, produce and sell power obtained as a byproduct in the production of fissionable materials. Directs AEC to give widest safe scope to private initiative.

Control of Information. AEC to enforce a ban on the dissemination of restricted data that might be used to injure the U. S. or secure advantage to a foreign nation, yet to provide leeway for ultimately relaxing restrictions as future conditions warrant.

Patents and Inventions. No private patents permitted for production of fissionable materials or their utilization for military weapons, but AEC will justly compensate for such inventions, when made by private citizens. Patents for non-military applications may be purchased or condemned by the AEC only when public interest is affected.

Appropriations. "Such sums as may be necessary and appropriate to carry out the purposes and provisions of the act" plus unexpended funds of the Manhattan Engineer District.

while Time runs out



NATIONAL VS. INTERNATIONAL

Born of nationalism, the Atomic Age began when three nations discovered a weapon that today gives them the greatest military power on earth. The prime question is: Shall the atom remain the

servant of its conqueror, nationalism?

During Year 1 of the Atomic Age the Truman-Atlee-King declaration, the masterly report of the State Department's atomic consultants, and the U.S. representative on the United Nations Atomic Energy Commission, have all called for international control of atomic energy. Year 2 will start with no such control. This failure to decide and act is in part a natural result of the extreme difficulty of the problem and the obvious dangers of unwise decisions. Nations everywhere face a triple dilemma in this Atomic Year 2: the dangers of nationalism, the dangers of internationalism, the supreme danger of not being able to make any decision in time to meet the atomic bomb threat.

INTERNATIONAL CONTROL AS PROPOSED BY THE U.S. TO U.N. ATOMIC COMMISSION

Baruch statement follows constructive path laid out by Atomic Consultants in "Acheson-Lilienthal Report."

The Plan. The U.S. has proposed that all nations band together to outlaw the use of atomic energy for war and to promote and harness its development for the benefit of mankind. To this end an International Atomic Development Authority would be set up, and to it the U.S. would turn over, at various stages of its organization, all atomic bombs, know-how, raw materials, facilities, and stockpiles of fissionable material. Thus IADA eventually would supersede national authorities on some matters and supplement them on others.

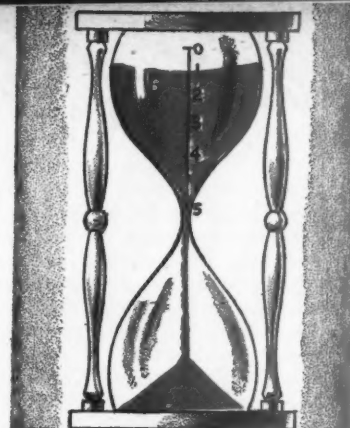
Owner and Operator. IADA would take over from national authorities or private ownership full management and control of all atomic energy matters that afford a possible threat to World security. These include:

1. **Raw Materials**—Supplies of uranium and thorium to be inventoried, controlled, and developed by IADA.
2. **Facilities**—IADA to control and operate plants producing fissionable materials and to own and control their products.
3. **Research**—IADA to undertake research and development on all aspects of atomic energy and to possess exclusive right of research on atomic explosives.

Private Initiative. Will have its chance to push forward the use of atomic energy for peacetime (non-dangerous) purposes. With IADA providing raw materials and carrying out necessary inspection, national and private enterprise may operate "safe" power piles, and produce and use radioactive isotopes for research, clinical and other applications. Radioactive isotopes produced by IADA also can be distributed for peacetime use.

The Mechanics of Safety. No plan is a certain guarantee against future atomic war. This plan should, however, prevent surprise attack with atomic weapons; for IADA is to buttress positive ownership or management controls with wide powers of inspection. Obviously, successful inspection rests on complete freedom of access or egress in any area.

Sanctions. At the heart of the plan lies the problem of penalty for violation—a matter for profound statecraft. To the U.S., one aspect of sanctions appears crystal clear: Here is an area where the veto right now held by the five great Powers must be redefined if it is not to be incompatible with the meaning and purpose of the proposed control.



Leading industrial nations can produce atomic bombs in five years, competent scientists announced after Hiroshima. Already one year of the precious five has been consumed in debate without international action. Soon it may be too late to check the growing momentum of the atomic arms race.

TIMETABLE—ATOM YEAR 1

1. July 16, 1945. World's first atomic bomb detonated in New Mexico.
2. July 26, 1945. President Truman and Prime Minister Churchill issue Potsdam ultimatum threatening Japan's destruction if she continues.
3. August 6, 1945. Atomic bomb dropped on Hiroshima.
4. August 9, 1945. Atomic bomb hits Nagasaki.
5. August 11, 1945. Army releases Smyth Report on "Atomic Energy for Military Purposes."
6. August 14, 1945. Japan accepts terms of Potsdam declaration.
7. November 15, 1945. Truman-Atlee-King issue declaration of intention and procedures looking toward international control of atomic energy by United Nations.
8. March 28, 1946. State Department issues Acheson-Lilienthal Report on the "International Control of Atomic Energy."
9. April 12, 1946. Manhattan Engineer District announces program for experimental development of atomic power.
10. June 1, 1946. "Atomic Energy Bill of 1946" passes Senate unanimously, is referred to House of Representatives.
11. June 14, 1946. First meeting of United Nations Atomic Energy Commission (Bernard Baruch as American member). Manhattan District announces availability of radioactive isotopes for research use.
12. July 1946. Joint Army-Navy tests of atomic bombs at Bikini.

...but if Man Masters Atom.

IF MUTUAL DESTRUCTION by the atomic bomb can be avoided, the first century of the atomic age will bring immense advances in scientific knowledge, health and living standards. Already many prospective benefits can be outlined, but those we can neither foresee nor suspect may be even more important.

This prediction is grounded in scientific experience; the most fundamental discoveries have always been the most fruitful. The study of molecules gave us chemistry. Faraday's experiments with electricity and magnetism are the foundation stones of the great electrical industry. Can one expect any less from an understanding of the heart of every atom?

BENEFITS

Atom-splitting benefits clearly visible today fall mainly in three classes: (1) heat and power applications of the uranium piles; (2) general industrial applications of equipment and methods originally developed for the bomb project; (3) chemical, biological and medical uses of the "tagged atoms" (radioactive isotopes) now abundantly available from pile operation.

It is now evident that the energy yield of the U235 in an atomic pile can be multiplied many times by returning to (or leaving in) the pile the plutonium and possibly the U233 produced respectively from the U238 and the thorium in the pile. This is an indirect way to "burn" inexpensive U238 and thorium, and thus greatly extend the supply and reduce the cost of atomic fuels.

POWER APPLICATIONS

Although present piles run at low temperatures, it is certain that temperatures high enough for the efficient operation of steam and gas turbines will be attained. Already an experimental atomic power plant has been ordered. Atomic power for certain remote installations (say, for heating Arctic airports) may not be far off.

In five or ten years uranium piles will be driving a few experimental ships and submarines. In 20 or 30 years uranium may begin to compete widely with coal as a fuel for suitably situated large central heating and power plants. The 50-ton minimum weight of shielding rules out nuclear power for automobiles and small piloted planes.

SPECIAL USES

Some day ultra-high temperatures from splitting atoms will be used for special industrial operations on metals and other materials. Even the dread atomic bomb might easily serve peaceful ends — blasting lakes in deserts, changing the course of rivers, leveling mountains.

INDUSTRIAL BYPRODUCTS

The special industrial equipment and methods developed for the bomb project will find hundreds of important uses — mostly for purposes unrelated to atomic energy. These developments include pumps with neither seals nor leaks, leak detectors of amazing sensitivity, ultratight welding, a portable mass spectograph for quick and automatic gas analysis, new ways of handling corrosive and poisonous materials, new diffusion barriers for the separation of gases and of petroleum products.

TAGGED ATOMS

Yet more important than any of these, in the long run, will be the hundreds of radioactive isotopes now available as by-products of pile operation. Chemically indistinguishable from the ordinary forms of the elements, these isotopes serve as tagged atoms or "spies" if mixed with common stable atoms of the same species. They "fly with the flock," and can later be identified as surely as banded birds. With these amazing tools of research, the course of any element or compound may be traced through the bodies of men, animals and plants. Similarly, tagged atoms

may be used in studying the course of many kinds of industrial and chemical operations.

BIOLOGY AND MEDICINE

A suspected hyperthyroid condition can be diagnosed by feeding the patient a minute measured amount of radioactive iodine. The click of a "Geiger" counter placed on the patient's neck will tell (1) what percentage of the swallowed iodine concentrates in the thyroid cells and (2) how rapidly that concentration is accomplished — giving a definite indication of the state of the gland.

In similar fashion the radioactive isotopes of hydrogen, oxygen and carbon will trace out the intricate transformations of carbohydrates and proteins in the human body. Radioactive phosphorus will explore the bones. Radioactive iron will show how and where blood cells are formed. Radioactive sodium will time the circulation of blood.

USES IN INDUSTRY

In chemistry the radioactive isotopes will speed the understanding of metallurgical and organic reactions. In industry they will measure flow, detect leaks, and do other useful work.

Meanwhile the uranium piles will be manufacturing certain radioactive isotopes that can serve as cheap but effective substitutes for high-cost medical radium.

KNOWLEDGE COMES FIRST

It is already clear that the chief benefits of atom splitting will come first as new scientific knowledge rather than as new engines and gadgets. But in the long run man's new understanding of the inner atom will enrich the whole range of human activity. This has always been the case with less fundamental discoveries in science. It can hardly be less with this most fundamental discovery.

ATOM SPLITTING WILL SERVE MAN IN:

CENTRAL POWER PLANTS



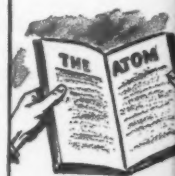
GIANT BLASTING OPERATIONS



MEDICAL DIAGNOSIS AND TREATMENT



NEW
FUNDAMENTAL
KNOWLEDGE



SHIP POWER PLANTS



BETTER INDUSTRIAL PROCESSES



RESEARCH TECHNIQUES



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Get in the handle!

THE TOOL YOU WANT

*and a Plastics Story
you should know*

Slip the proper bit into the swivel chuck and you are ready for the job at hand! These Hollowell kits are time and space savers for industrial workers, repairmen and home mechanics.

To match the ruggedness of the metal section, the plastic handles are injection molded of LUMARITH ethyl cellulose. This battle-tested Celanese synthetic is outstandingly tough even at temperature extremes...is color clear through...is comfortable to the touch in cold weather...is electrically shockproof.

These kits show how Celanese plastics can do a job for product improvement and exert sales influence with the consumer. Handles are stamped, "MADE OF CELANESE PLASTIC"—a phrase that means something to the buying public. Celanese Plastics Corporation, a division of Celanese Corporation of America, 180 Madison Ave., New York 16, N.Y.

*Reg. U. S. Pat. Off.

LUMARITH*

A Celanese Plastic*



The Hollowell line of Speed Tool Kits manufactured by Standard Pressed Steel Company of Jenkintown, Pa., includes the Auto Kit, the Socket Wrench Kit, the Socket Screw Kit, Home Kit and others. They are obtainable at suppliers throughout the country. Lumarith handles are molded by Arnold Brilhart, Ltd., Great Neck, Long Island.



*"—but there's no work to
punching a typewriter"*



Swinging an air hammer spells l-a-b-o-r to its operator. The typist's job looks like child's play to him. But try pushing a heavy typewriter carriage back all day long, and you'll know you've been at work.

American Magnesium products have helped ease both tasks. Air hammers, and many other hand tools, have been lightened considerably with magnesium parts. The typewriter roll pictured here has a feather-weight magnesium core.

Manufacturers interested in lightening their products with magnesium will find our engineers and production men ready to help. Get in touch with the nearby Alcoa office. Or write ALUMINUM COMPANY OF AMERICA, 1711 Gulf Bldg., Pittsburgh 19, Pa.



MAGNESIUM



PRODUCTS

**AMERICAN MAGNESIUM
CORPORATION**

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA



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H. & M.: Railroad Under Water

Hudson Tubes, once hailed as mankind's "greatest engineering feat," have proved to be financial drainpipes, and current new management finds new problems piling up on top of the old ones.

Probably no railroad on earth has more headaches per mile of line than the Hudson & Manhattan Railroad Co., operator of New York's once renowned and often reviled Hudson Tubes.

The H. & M. runs an 8½-mile passenger system connecting New York with the New Jersey bank of the Hudson. Essentially, it is just a metropolitan subway, but officials often point out glumly that in one form or another it has most of the problems of a Class I transcontinental carrier—interchange of passengers, division of fares, federal regulation, and the railroad labor laws—plus some specialized troubles of its own.

• **New Regime**—Even by H. & M. standards, the last few months have been hectic. On Mar. 15, an insurgent group of stockholders swarmed into the annual meeting with enough proxies to install a wholly new board of directors and establish their leader—Robert A. W. Carleton of the Carleton Construction Co., New York—as president and chairman.

The new management hardly got its feet under the desk when the national rail strike broke over its head. H. & M. engineers and trainmen (who belong to the national brotherhoods) were out for the two days that the strike lasted. When they went back, the management announced that it would not be bound by the 18½¢-an-hour increase, awarded the brotherhoods, on the grounds that it should not be put in the same class with the big steam railroads. (One point it cited was that the rule changes which were an issue in the national settlement would not have applied to H. & M.)

• **Out for 24 Days**—The H. & M. workers went out again and this time they stayed 24 days. The strike finally was settled when the Hudson & Manhattan reluctantly accepted the recommendation of President Truman's emergency fact-finding board, which gave the workers the full 18½¢ increase.

Now the new management is trying to figure out where it will get the \$610,000 that it figures the wage boost will add to annual expenses. Since last year's income fell \$500,000 short of covering the full interest on the company's 5% income bonds, most of the figuring will be done in red ink.

Hudson & Manhattan is used to red ink by now. In fact, H. & M. history has been a corporate hard luck story almost all the way through.

• **How It Began**—The project started in 1873, when Col. DeWitt C. Haskins, a civil engineer, set out to drive a pair of parallel tunnels through the silt of the Hudson River bed from 15th St., Jersey City, to Christopher St., New York. Haskins planned to build oval tubes with an outer shell of thin steel and a lining of brick. He counted on compressed air to keep his tunnels from caving in while the brickwork was being built.

Haskins sank his first shaft at Jersey City in 1874. Various legal difficulties tied him up until 1879, when he finally started digging out under the river. By the summer of 1880, things were going nicely. Then the tunnel hit a soft spot; air pressure dropped; the head of the

tunnel flooded with an explosive rush. Only seven workers managed to get away from the heading in time. Twenty others drowned.

• **By Fits and Starts**—Haskins got his tunnel pumped out by the beginning of 1881, but the extra expenses were too much for him. Work continued in fits and starts for the next ten years, with each new effort followed by a long intermission while Haskins scraped up more capital. Finally, in 1891, with only 1,600 ft. to go on the north tunnel, work stopped entirely "for lack of funds." Haskins had spent about \$3,000,000—all that he could raise on both sides of the Atlantic. Bondholders later took over at a foreclosure sale.

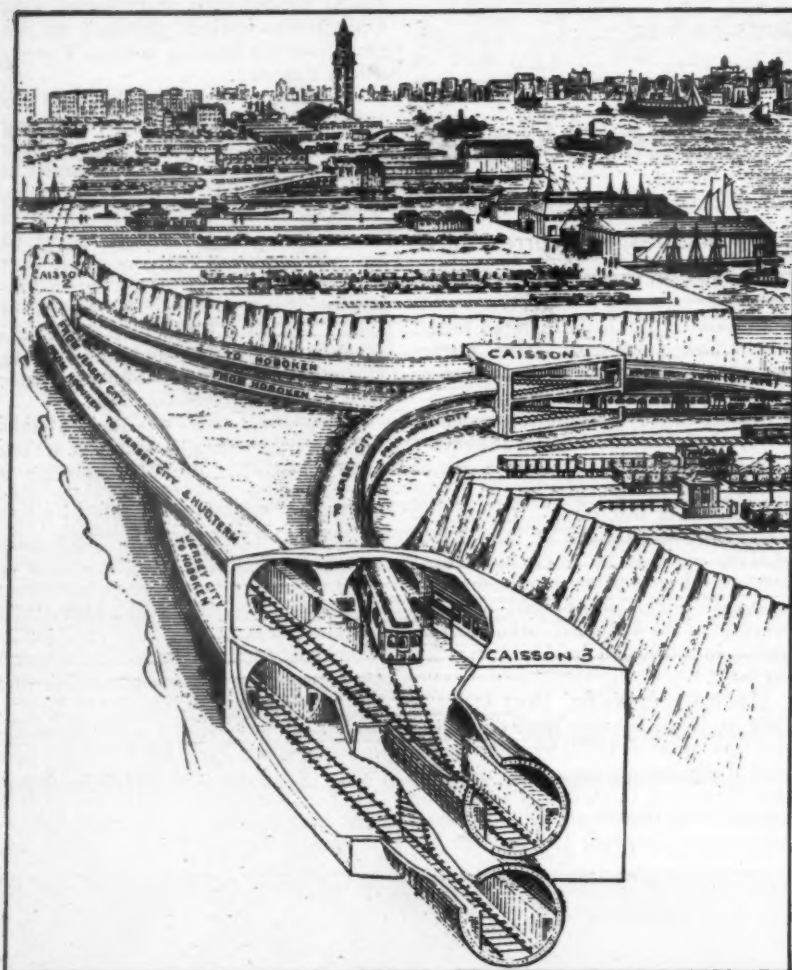
Ten years later, William Gibbs McAdoo, then a bright young New York lawyer, got the idea of promoting a tunnel under the Hudson. He persuaded the New York investment house of Harvey Fisk & Sons to back him, and, in 1902, formed the New York & New Jersey Railway Co., which took over what was left of the abandoned Haskins project.

• **Modern Method Used**—The McAdoo syndicate's first move was to call in the engineering firm of Jacobs & Davies, which had just handled a tough tunneling job under the East River for one of the New York gas companies. Charles M. Jacobs decided to use the system that later became the standard for underwater tunneling—compressed air,



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At the junction of the north tubes and the line along the New Jersey shore, Hudson & Manhattan's tunnels writhe like dyspeptic snakes to avoid tracks crossing. This is one reason for the violent curves that any H. & M. commuter knows by heart. Lines run north to the Lackawanna station (tower) at Hoboken, south to connect with the downtown tubes and the Pennsylvania R.R.

steel ring construction, and a tunneling shield, a huge metal cylinder that fits over the uncompleted end of the tube and is driven ahead by jacks.

Jacobs' tactics worked, but he had more than his share of grief because of the peculiar construction of the Hudson River bed. The upper half of the tunnels ran through wet silt; the bottom often had to go through solid rock.

• **Blowpipes Do It**—The problem was to blast the rock in the bottom of the heading without bringing in a flood of soft silt, which sometimes squirted like water under the pressure of the river overhead. One trick that Jacobs used was to bake the silt with kerosene blowpipes until it was temporarily trustworthy.

By 1908, the tube system was complete. It consisted of two sets of tunnels. One pair followed the line of the

original Haskins diggings from Jersey City to Christopher St., New York, then turned up 6th Ave. to 33rd St. The other pair dipped under the river downtown, from Cortlandt St., New York, to Exchange Place, Jersey City. A line along the Jersey bank connected it with the uptown tunnel and with the Lackawanna Railroad station in Hoboken.

• **Into One Company**—By this time, the syndicate had sorted out the various companies it had formed during the construction period and combined everything into one company—the Hudson & Manhattan. It also had put up twin office buildings, 22 floors high, at the New York terminus of the downtown tubes. Altogether it had spent about \$70,000,000.

Hopes were running high about this time. The tubes were the first tunnels under the Hudson (although the Penn-

sylvania Railroad's entrance to its 33rd St. station in New York ran them a close second) and their completion caused much excitement.

• **"In Rosiest Dreams"**—A little brochure issued by the company in 1908 described them as a project that "will for years, if not for ages, stand as the greatest engineering feat undertaken by man." It also spoke happily of the multitudes that would swarm into the tubes seeking the traveling "relief they have so often entertained in their rosiest dreams."

Within a few years, the rosy tones began to fade. Although H. & M. had increased its traffic by arranging with the Pennsylvania for interchange of passengers at Exchange Place and for operation over Pennsylvania tracks into Newark, passenger revenues consistently fell short of meeting fixed charges.

• **Debt Readjusted**—In 1913, the company arranged a voluntary readjustment of debt with its bondholders. The owners of \$66,000,000 of its 4½% first mortgage bonds traded them in for half the principal in 5% bonds and half in 5% adjustment income bonds, the interest on which was not cumulative until 1920. Over the next seven years, the company was able to pay only 1% a year on the income bonds.

In the twenties, things began to look up. Holders of the adjustment income bonds started getting their full 5%. In 1923, the company began paying on its preferred stock. And in 1925, common stockholders got their first dividend.

• **Population Gains**—The main reason for H. & M.'s comparative affluence during this period was the gradual growth of population on both sides of the river and the migration of New Yorkers to the suburbs. The total of fares collected rose steadily from 91,000,000 in 1920 to 113,000,000 in 1927.

At this point, the Hudson & Manhattan jinx—motor competition—got in its first licks. The city-built Holland Tunnel was opened in November, 1927. H. & M. traffic started to slip immediately.

By 1931, the total fares had skidded down to 96,000,000. In that year the George Washington Bridge was opened. The double weight of competition and the general business depression showed up in a further drop to 76,000,000 fares in 1934.

• **Then Another Tunnel**—Two years later, H. & M. had struggled back to about 78,000,000 fares a year. Then the Lincoln Tunnel was opened, and the bottom fell out of the tube business all over again. By 1940, the total number of fares was down to 65,000,000.

During this period, total passenger traffic across the Hudson had been shooting up. The number of bus passengers rose from 1,500,000 in 1926 to

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32,000,000 in 1940, and in the same time passengers using private cars increased from roughly 20,000,000 to about 72,600,000.

• **Lean Years**—H. & M.'s net income faded even faster than its traffic. Common stockholders got their most recent dividend in 1932. Preferred dividends stopped the next year. Since then, revenues never have been sufficient to cover the full 5% due the holders of the income bonds, although so far they always have covered charges on the 5% fixed interest bonds.

The closest H. & M. has come to breaking even in the last twelve years was in 1943, its best war year, when it carried 83,000,000 passengers and earned 4.44% against the income bonds. By the end of 1945, accrued charges on the income bonds added up to 241%.

• **Brown Unseated**—The long dreary period of low income and no dividends was the main reason for the sudden upset in management last spring. From 1933 to 1945, the chairman of the company was Walter F. Brown, President Hoover's Postmaster General, famous as the man who couldn't fit into a government car in a plug hat, who went to H. & M. immediately after the Republican exodus from Washington.

The Brown management trimmed expenses and managed to cut the company's fixed debt some \$18,000,000 by using depreciation reserves to buy its bonds in the open market at 30¢ or 40¢ on the dollar, but there wasn't much it could do for the common stockholders.

• **Showdown**—Carleton, who already had shown a talent for corporate infighting in a scrap over the Third Avenue Transit Corp., lined up H. & M. stockholders behind him and came into the meeting last March with 222,532 votes against the management's 135,889.

Although the new directors were elected on a platform of doing something for the stockholders, the arithmetic of the situation will make it hard for them. Now that the war is over, H. & M. will find its competition intensified. About the only hope of increasing revenues is to get a higher fare, and that presents some special troubles.

• **Dimes vs. Tokens**—During the war, the Interstate Commerce Commission allowed the tubes to charge a 10¢ fare, with eleven tokens selling for \$1. The company already has petitioned to make it 10¢ straight, with no tokens, but that would not begin to make up the regular deficit, let alone the additional wage bill.

Boosting the fare above 10¢—even if the ICC would permit it—would ball up the system of coin box collection and would drive part of the remaining traffic to the buses. It is a tough problem from any angle, and the fact that New York's center of gravity is shifting

uptown while New Jersey is building up shopping centers of its own doesn't make things any simpler.

• **To the Port Authority?**—During the wage negotiations, city officials suggested that about the only way the company could get out of its tangle would be to turn itself over to the Port of New York Authority.

"And here," as the company's 1908 brochure concludes, "ends our story of the greatest engineering work ever attempted, the most sublime and far reaching traveling beneficence for mankind."

Rails Disappointed

Rate boost falls below their expectations, and many in freight traffic circles deny it will yield what ICC assumes.

Many major railroads are still trying to estimate the benefits they can expect from the general freight rate increase made effective by the Interstate Commerce Commission (BW—Jun. 29 '46, p115). Though they have yet to render their verdict, comments that have been made to date by other large carriers indicate that the rate boost isn't apt to please any rail officials or their stockholders.

Actually, the increase announced by the ICC is pretty complicated, more readily understood by rail tariff students than by the average layman.

• **Many Exceptions**—Roughly speaking, the nation's carriers since July 1 have been permitted, on three days' notice, to increase by 6% their freight rates on a wide variety of commodities. However, there are many important freight items missing from this list.

Agricultural products, livestock and its products, and low-grade mine products such as sand, gravel, broken rock, and slag are not included; tariffs for moving this group by rail can only be raised half as much, or 3%.

Likewise excepted are iron ore, anthracite, and coke. In the case of iron ore, the increase authorized has been set at 2¢ a ton in the East and 3¢ elsewhere.

• **Hard Coal Rate up 3¢**—Rates for hauling hard coal and coke, previously upped in 1942, receive a new boost of 3¢ a ton in all areas.

The carriers were ordered to limit their pickup and delivery service to shipments where the line-haul rate involved was at least 50¢ per 100 lb.

Because roads operating in the East (that territory lying north of the Potomac River and east of the Mississippi) showed a lower return on their total valuation in 1945 than systems

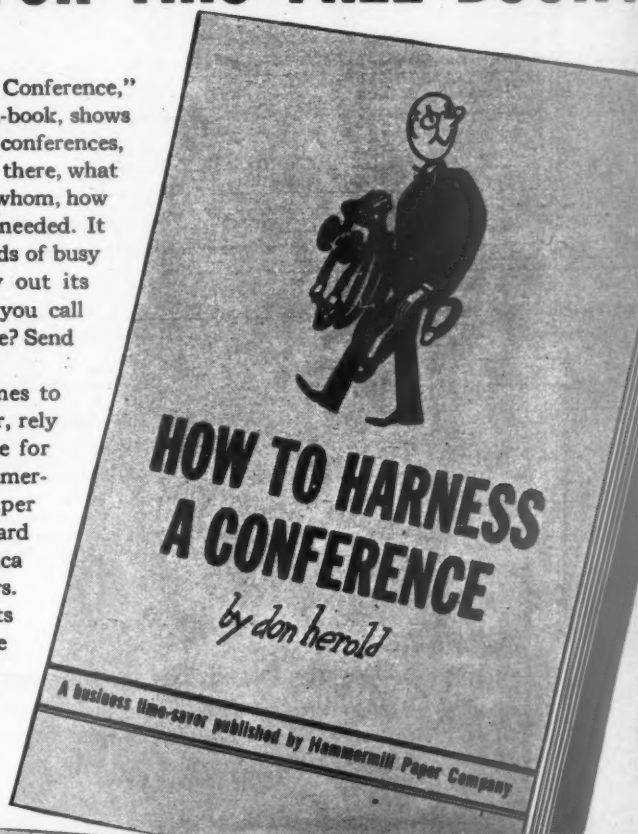
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domiciled elsewhere, that group is now being permitted to tack another 5% increase on top of the raise granted to the industry as a whole. There are, however, important exemptions in this connection. The added 5%, for instance, can not be collected on shipments of hard and soft coal, lignite, coke or iron ore.

• **Interim Measure**—According to the ICC, the new rates do not represent "permanent" tariffs. They are only to continue in effect until the commission can hold a full hearing (scheduled to start shortly) and arrive at a decision on the carriers' recent request for a general rate boost of 25% to offset their recent sharp wage increases and today's higher costs of materials and supplies.

As the commission sees it, the higher rates it has just granted, based "on the volume of traffic in sight," should raise the railroads' annual gross revenues by some \$390,000,000, "plus whatever increases will come after Oct. 1 next [chiefly to western roads and to a lesser degree those in the Southeast] from abolition of the mandatory reductions in rates on land-grant railroads which other lines have equalized."

• **Many Have Doubts**—Whether the new rates will produce extra revenues at the rate the ICC estimates, however, remains to be seen. Many railroaders currently have serious doubts that they will, especially in the next six months.

This group (like some Wall Streeters) is not convinced, for example, that 1946 may not have in store additional serious labor troubles which might badly restrict production of key industries and sharply reduce the rail haul to and from such centers. There is some uncertainty, too, about the effect competing transportation mediums may have on rail traffic over the near-term now that more planes, trucks, and shipping are becoming available.

• **Difference of Opinion**—Some freight experts deny that the new increases actually amount, as ICC claims, to around 6% on an over-all basis, some 11% where the eastern roads are concerned. Instead, they say the new ruling only restores the higher rates that were in effect during the war until early 1943. And they point out that those increases, despite the commission's original estimates that they would lift revenues some 6%, proved far less beneficial.

For this current skepticism, also, there seems a definite basis. The Kansas City Southern, for one, claims that the new rates, due to its type of freight haul, won't increase revenues by over 3%. The Milwaukee Road expects less than a 4% increase to result, and the Chicago Great Western doesn't look for more than a 4.7% hike. In the East, the New York, New Haven & Hartford is said to believe that the boost at best

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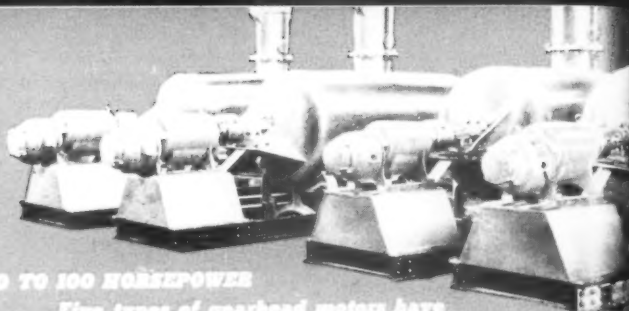
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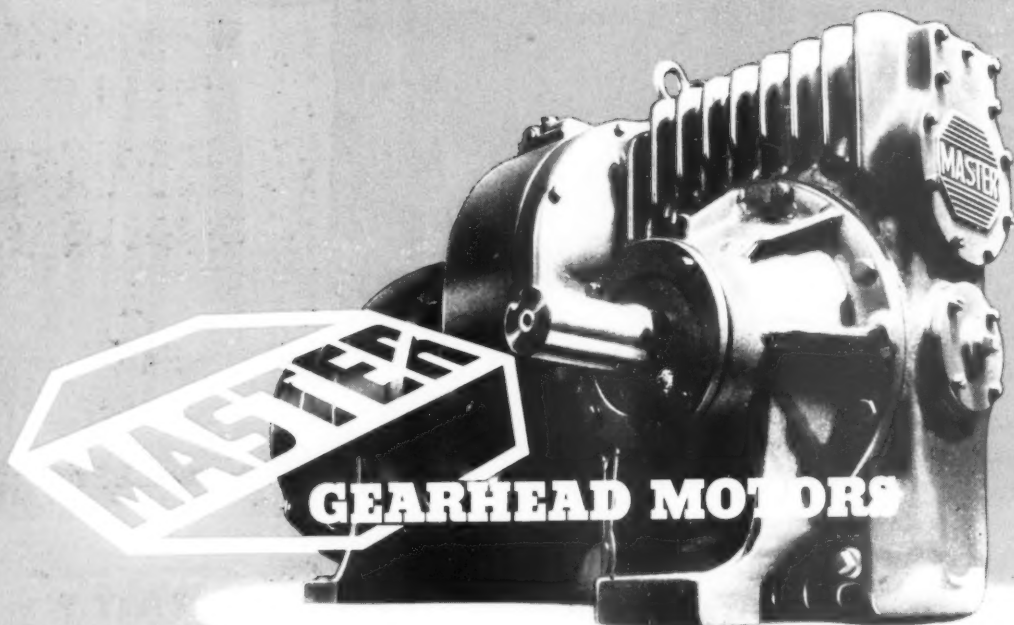


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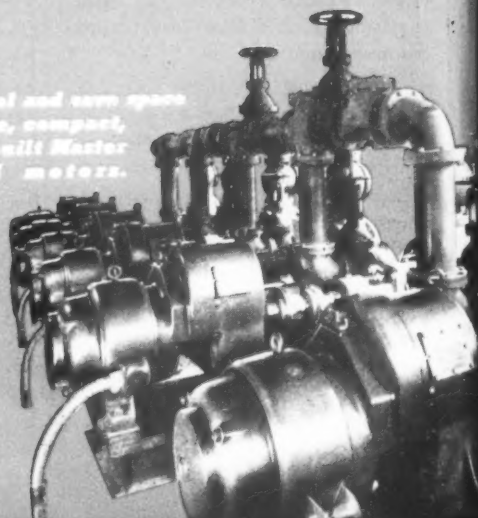
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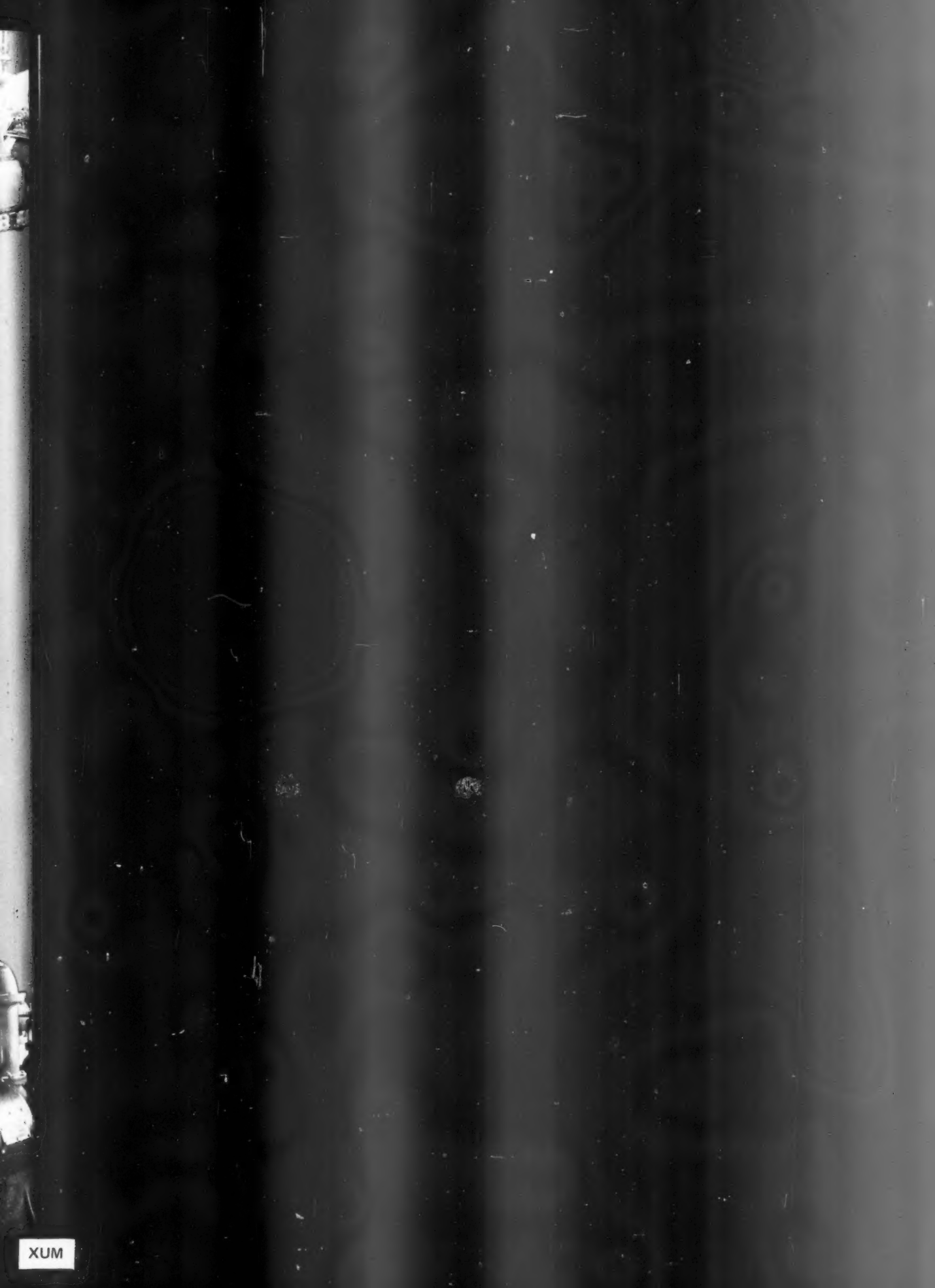
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• **Wide Discrepancy**—Particularly upsetting to railroaders generally is the fact that the commission wasn't willing to grant their industry even a temporary raise providing more than \$390,000,000 of extra annual revenues despite ICC's own earlier estimate that the recent wage increase had raised their yearly payroll costs by some \$725,000,000.

Because of what has happened, some rail officials are even wondering if their roads won't be in the red when full 1946 operating returns are all in. Their remarks, of course, may be due to current disappointment over ICC's temporary settlement of their troubles.

• **More Optimistic**—An exception to the general pessimism was the attitude of Robert E. Woodruff, president of the Erie, who expressed confidence that

ICC would grant increases sufficient to permit dividends and adequate maintenance. He said June operations would add \$500,000 to the operating deficit of \$3,600,000 reported by Erie for the first five months, but that improving business indicated a gain for the rest of the year.

There is no doubt, however, that substantially higher freight rates must be forthcoming if the roads are going to get anywhere in the postwar period. New York Central, for example, estimates its costs have been raised \$80,000,000 annually as against \$28,000,000 of added yearly revenues which the new freight rates will provide. Comparable estimates for Burlington are \$20,000,000 vs. \$6,000,000; for Southern \$21,000,000 vs. \$8,000,000; and for the Missouri Pacific \$22,000,000 vs. \$6,000,000.

Industry's Billion-Dollar Club Shrinks

Fiscal readjustments necessitated by the advent of peace obviously have been shrinking corporate assets sharply from their highly inflated war levels even though they still remain far above 1939 figures. Only 40 American business enterprises could boast of \$1 billion or more of assets at the close of 1945, compared with the 43 in 1944 and 41 in 1943 (BW—Oct. 7 '44, p65).

Members of 1945's Billion-Dollar Club included 17 in the banking field (BW—Jan. 19 '46, p68), nine in-

surance companies, and 14 industrial, rail, and utility corporations. Still securely on top was the Metropolitan Life Insurance Co.

Nonfinancial companies which could point to 1945 sales or revenues of over \$1 billion numbered ten. Relatively few, however, were included among the billion-dollar-assets group.

Enterprises outside the banking or insurance field whose total consolidated assets recently exceeded the \$1 billion-mark are:

	Assets as of	
	Dec. 31, 1945	Dec. 31, 1939
Bell Telephone System.....	\$6,766,000,000	\$5,227,000,000
Pennsylvania Railroad System.....	2,826,000,000	2,359,000,000
Standard Oil Co. (N. J.).....	2,532,000,000	2,035,000,000
U. S. Steel Corp.....	1,891,000,000	1,769,000,000
General Motors Corp.....	1,814,000,000	1,323,000,000
New York Central R. R.....	1,735,000,000	1,820,000,000
Southern Pacific System.....	1,686,000,000	1,908,000,000
Union Pacific R. R.....	1,524,000,000	1,219,000,000
Consolidated Edison Co. (N. Y.)....	1,324,000,000	1,353,000,000
Atchison, Topeka & Santa Fe R. R....	1,247,000,000	1,310,000,000
E. I. du Pont de Nemours.....	1,205,000,000	858,000,000
Commonwealth & Southern System...	1,205,000,000	1,143,000,000
Baltimore & Ohio R. R.....	1,167,000,000	1,207,000,000
Socony-Vacuum Oil Co.....	1,076,000,000	930,000,000

	Sales or Revenue	
	1945	1939
General Motors Corp.....	\$3,128,000,000	\$1,377,000,000
Bell Telephone System.....	1,931,000,000	1,107,000,000
U. S. Steel Corp.....	1,747,000,000	904,000,000
Standard Oil Co. (N. J.).....	1,618,000,000	934,000,000
Great Atlantic & Pacific Tea Co.....	*1,402,000,000	*990,000,000
Bethlehem Steel Corp.....	1,327,000,000	414,000,000
Swift & Co.....	**1,308,000,000	**757,000,000
General Electric Co.....	1,298,000,000	305,000,000
Armour & Co.....	**1,213,000,000	**715,000,000
Sears, Roebuck & Co.....	***1,045,000,000	***617,000,000

*Fiscal years ending Feb. 28, 1945 and 1940. **Fiscal years ending in October. ***Fiscal years ending Jan. 31, 1946 and 1940.

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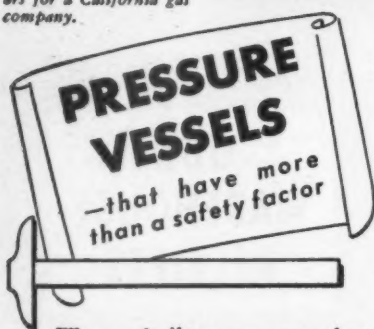
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FIVE PLANTS SERVING THE WEST

LABOR

Annual Wage for Packers?

Packinghouse Workers, negotiating new contracts in July, will insist upon pay guarantee. Big concerns doubt that they can apply the plan successfully, but government may decide issue.

When the United Packinghouse Workers of America (C.I.O.) sits down this month with representatives of the big packers to negotiate new contracts, first on its list of demands will be the establishment of a guaranteed annual wage in the industry.

Other demands will be (1) a \$1-an-hour minimum wage and proportionate increases in the higher job classifications, (2) elimination of present geographical differences in wage rates, (3) a bonus to offset rising living costs, which union members largely ascribe to their employers' opposition to the Office of Price Administration.

Present U.P.W.A. contracts with the Big Four—Swift, Armour, Wilson, and Cudahy—and with smaller packers, ex-

pire Aug. 11. Negotiations are expected to begin July 11.

• **Shadowboxing?**—But, somehow, the otherwise momentous bargaining conferences scheduled to open in Chicago this month already looked a little blurred; outside the sharp focus of reality. The reasons were the Administration's sensitivity about the meat famine and its hairtrigger policy of seizing important strikebound properties.

It was expected that if the bargaining sessions developed any important disagreement leading to a strike, the government would quickly be running the stockyards. Then—and only then—would serious bargaining begin.

The precedent to consider, of course, was coal, where the union made its final



CLASSES IN STRENGTH BUILDING

The National Citizens' Political Action Committee's first college of politics held its session in Washington last week: its enrollment (above) 500. The 39 one-week courses include political research, analysis, and organizing; campaign financing; how to deal with Congress. Most students were from P.A.C. but enrollment included observers from opposite-minded groups—the National Assn. of Manufacturers, for example. Lecturers were recruited from both major political parties, government agencies, and unions. Significantly, N.C.P.A.C. stalwarts, Sen. Claude Pepper and Dr. Frank Kingdon, were joined as "graduation speakers" by A. F. Whitney, head of the rail trainmen.

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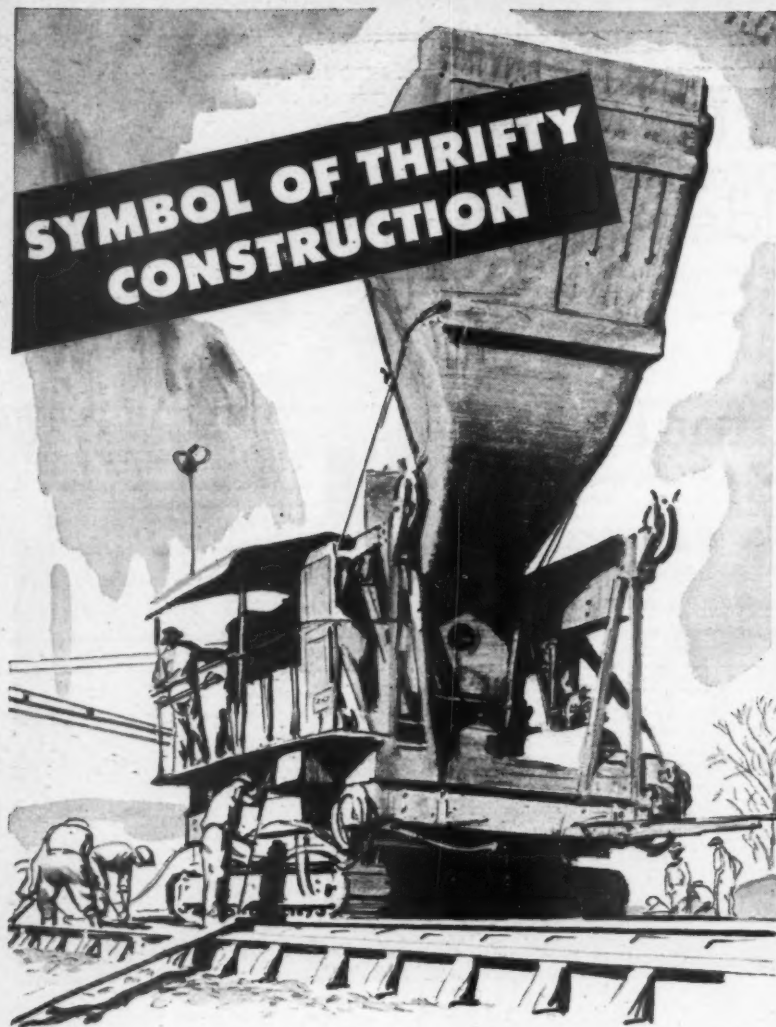
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deal with the government and where the private owners will get their properties back only upon accepting the terms which the government negotiated.

Thus, the attitude of employers may not be at all relevant to the great question of whether the unions will win the annual wage. It may well be decided by a government policy based on expediency.

• **Landmark**—The move for a guaranteed annual wage in the traditionally seasonal packing industry marks the first determined attempt by a union to write this major C.I.O. objective into its contract. Tentative efforts in the direction of industry-wide annual wage agreements have been made by the United Steelworkers, which succeeded in including a 30-week guarantee in its contract with a small knitting and hosiery machine firm (BW—Aug. 18 '45, p. 100). The United Auto Workers also has advanced proposals for a guaranteed annual wage, in lieu of overtime, in negotiations with auto parts makers (BW—Sep. 29 '45, p. 17). But until now the annual wage has been a long-range union goal rather than a major contract demand.

What form of annual wage guarantee the U.P.W.A. will propose was not announced at the executive board meeting in Chicago this week. Details will presumably be a subject for negotiation. But union officials, from their references to the successful annual wage plan at the George A. Hormel Co.'s Austin (Minn.) packing plant, can be expected to advance a plan closely patterned after that used by Hormel.

• **Hormel System**—Heart of the Hormel plan is the company's agreement with the U.P.W.A. local to pay a stated weekly salary, regardless of the hours worked, and to give the worker 52 weeks' notice before a lay-off. In return, no overtime premium is paid until a worker has exceeded 53 hours in any one week, or unless his total hours worked in a year exceed 2,080.

The Amalgamated Meat Cutters (A.F.L.), in a concerted drive for the annual wage, has also served notice that in its new contracts with the packers it will demand a guarantee of 2,080 hours pay a year. The A.M.C. contracts also expire Aug. 11.

• **Union Argument**—In defense of its wage guarantee proposal, the U.P.W.A. takes the position that any increased cost to the employer from a 52-week guarantee of employment can be offset by compensating economies that would result from savings on overtime pay, lower labor turnover, more regular operations, and elimination of traditional but inefficient methods. The union insists that the packers can do much to smooth out the wide seasonal variations in livestock receipts at stockyards by direct buying from farmers and other methods, pointing to Hormel's steadier

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1946



When metal first went through the mill

The first rolling mill in this country was on the Chester Creek in the Colony of Pennsylvania. It was built in 1746 by John Taylor, the descendant of an English settler, for his "Sarum Ironworks." The plant had "three stacks" and worked at "full blast," turning out iron bars which were hauled to Marcus Hook for shipping.

Today not only rolling mills but ingot cars, cranes and all the heavy machines used in the steel industry are equipped

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Here is a handy, comprehensive guide to the best policies and procedures for setting up a program of job and worker appraisal. Clearly and concisely provides the practical operating business executive and personnel specialist with usable facts, pointers and definite methods for determining fair rates of pay for any given job and for measuring the true efficiency of any individual employee. The book fully considers all recent advances and draws upon the experience of a large number of experts.



JOB EVALUATION and EMPLOYEE RATING

By Richard C. Smyth, Director, and Matthew J. Murphy, Assistant Director, Industrial Relations, Bendix Radio Division, Bendix Aviation Corp. 255 pages, 5 1/2 x 8 1/2, \$2.75.

This book points out the current status of job evaluation and merit rating as effective tools of management. It follows the same sequence in presenting the subject matter as would be used in actually installing and maintaining a program of job evaluation and merit rating in operating practice. Step by step it analyzes the major types of plans currently in use and shows how to establish and administer a system which will function smoothly, giving proper weight to the questions of policy which must be settled before proceeding with any plans. The information on setting the basic wage structure and making labor-market wage surveys is unusually complete.

Contents

JOB EVALUATION

1. Purpose and Significance
2. Ranking and Grading Methods of Job Evaluation
3. Factor-comparison Method of Job Evaluation
4. Point Method of Job Evaluation
5. Comparison of Job-evaluation Systems
6. Job Descriptions
7. Installing and Maintaining the Job-evaluation Plan
8. Employee Classification
9. Labor-market Wage Survey
10. Determining the Wage Scale
11. Basic Wage Administration Policies

MERIT RATING

12. Introduction to Merit Rating
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flow of livestock as proof that it can be done.

The union also argues that plant labor and salary costs in the packing industry constitute only 8% to 10% of total costs. It says that last winter's 20% wage increase raised packers' costs only 2%. It also asserts that packers make their big profits from nonedible byproducts, which labor costs affect less than edible products.

● **Packers' Doubts**—Packers are expected to reply that the seasonal nature of their business makes the plan impractical for the big packers. What Hormel does is unquestionably good for Hormel, they say. But if other packers were to adopt the same techniques, industry spokesmen are certain that Hormel would lose its present advantage and the other

packers would gain nothing. It is easy for Hormel, they say, with plant activities chiefly in a livestock raising and feeding farm area, to get a steady flow of livestock by cultivating friendship of neighboring cattle and hog raisers. But the big packers, buying on a nationwide scale, say they cannot do this.

Hormel's success with an annual wage plan dating back to the early thirties is also not pertinent for the industry as a whole, the big packers believe. They see its present development as largely attributable to boom times. When competition again becomes keen, the large companies suspect, Hormel's plan may not be so easy to operate. In hard times, the union agreement might saddle a company with costs that would be hard to get rid of and too heavy to carry.

Veterans Replace Women in Record Labor Force

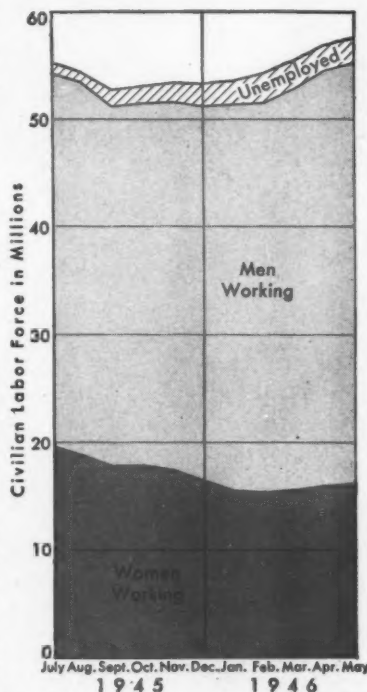
The civilian labor force reached 57,630,000 in May, highest level in history and an increase of 2,410,000 since July, 1945, with only 2,310,000 unemployed—a drop in the jobless for the second successive month. Significant changes shown in the composition of the labor force are a sharp decline in the number of women working and broad gains in the number of employed males. These changes indicate that returning servicemen are being absorbed into civilian jobs.

From July, 1945, to last February, 4,000,000 women (one out of five) left the labor force; and although 680,000 have since returned, the number of those theoretically out of the jobs market—housewives, older women, and schoolgirls—continues large.

● **Veterans Take Over**—Increases in male workers have more than offset the withdrawals by women, and returning veterans make up a major portion of the swollen male labor force. By May, 9,730,000 former servicemen were included in it, and 8,800,000 (or nine out of ten) were employed.

However, of 1,890,000 males unemployed in May, nearly one million—or 49%—were veterans. Indicative of withdrawals of temporarily employed older men and boys from the jobs market is the fact that the net gain in the number of men in the labor force is much smaller than the number of veterans now included.

● **Over the Hump**—Of demobilized servicemen not included in the labor force, an estimated 855,000 are in school or are taking training courses, which the Veterans' Administration



Data: Bureau of the Census.

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expects ultimately will attract a total of 2,000,000 veterans. Another 850,000 veterans do not show up either in the labor force or in educational programs, but eventually will appear in one or the other.

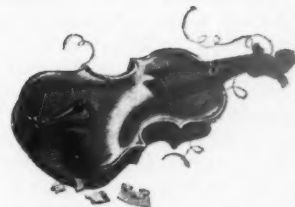
While 3,750,000 were still in the armed forces in May, the United States Employment Service believes the reemployment hump has been passed successfully. April was the first month in which the number of veterans placed in jobs exceeded the number discharged.

It can kill a man!

Maybe you think only an *imaginary* foe can fall before your lad's toy Tommy gun. But when Junior leaves it lying on steps or sidewalk, it becomes a deadly weapon in *reality*. Someone passing by may trip on it and be injured seriously—even fatally. And then *you* may

face a costly damage suit.

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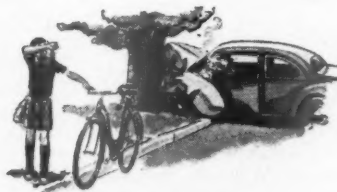
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THE LABOR ANGLE

Unorthodox

Conservative newspaper editorialists have recently found in the utterances of C.I.O. officials unusual opportunities for favorable comment. Van A. Bittner's ringing denunciation of Communists in unions touched off a veritable flood of editorials, most of which asked, hopefully and encouragingly: Is the C.I.O. finally going to comb down its Reds? Currently, another wave of editorials is appearing, inspired by the words of Emil Rieve who told a mass meeting of his textile union followers that labor must accept a greater measure of public responsibility for its acts. The writers want to know whether, at long last, organized labor is growing up.

It may be, it may be. And it would be a shame to discourage any tendencies in that direction by questioning the sincerity of solid labor citizens like Bittner, Rieve, and others of their stripe. Nevertheless, it is a fact that both the C.I.O. and the A.F.L. are confronted with a peculiar organizing problem in their campaigns to develop mass membership units in the South, and they can be expected to use somewhat unorthodox methods to make their representatives appear less undesirable in that hostile environment. Without impugning their motives, it is still of interest to note that Bittner is the man in charge of C.I.O.'s "Operation Dixie," and Rieve's textile union is the organization which has most to gain in the success of the southern drive.

Competitive

Internal competition in the labor movement, something virtually nonexistent ten years ago, more and more influences the labor outlook today. A united labor movement responds to the simple, predictable stimuli of its members' needs and aspirations. But a divided one—split not only into A.F.L. and C.I.O. but into left-wing, right-wing, center, and into Lewisites, Murrayites, etc.—is infinitely more complex. And its operations more erratic.

Everybody knows that John L. Lewis wants to show he can get more for his miners than Philip Murray can get for his steelworkers; that Murray wants to top his right-wing critics like Walter Reuther in the auto workers; that Reuther wants to

outdo the Communists who are after his scalp; that Harry Bridges wants to demonstrate that his militant tactics pay off best; and so on in an endless circle.

All of these large figures have now had their turn in riding a lead horse around the track in the first postwar labor sweepstakes. How well each has done is a matter of record. What business wants to know is, how soon will a second heat begin and what will be its stakes.

Timing

Not even the Lewises or the Murrays or the Reuthers know the full answer to that question yet. And the reason why they must be vague is, in large part, because each must watch to see what his competitors will do. And for the next round, they'll all be remembering one outstanding lesson which the last big strike wave taught: that the unions and leaders that came in late did best. Measured by what Lewis and Bridges got at the end of the cycle, Reuther and Murray did poorly at its beginning. The glory reflected on a labor leader through a new triumph in 1945-46 was short-lived; another leader was right behind him with a greater triumph.

Pondering this lesson, a Lewis, a Murray, or a Reuther may wait a little longer in starting off the next round than anybody now thinks likely.

Fight

Telegraphing in advance what can be a very powerful punch, A.F.L.'s teamsters union has declared that when the now-independent International Brewery Workers completes its announced plan of affiliating with the C.I.O. (BW—Jun.29'46,p100), the teamsters will start organizing both the inside and the outside employees of breweries. The I.B.W. left the A.F.L. some years ago because of a dispute with the teamsters over which organization had jurisdiction over the beer trucks and since then an uneasy truce has prevailed in the industry (some drivers of beer trucks keep their membership dues paid up in both of the unions). If the teamsters really start moving into the breweries, an intense—and even violent—jurisdictional battle can't possibly be avoided.

U.A.W. Turmoil

Left-wingers' decision to ban Communist influence won't mean the end of fighting for auto union leadership.

Factional battling within the high command of the turbulent C.I.O. United Auto Workers has taken a startling new turn with the left-wing bloc bowing to political pressure by getting ready to read Communist Party members out of its caucus.

• **On Defensive**—The left-wingers, led by George Addes, secretary, and Richard Leonard and R. J. Thomas, vice-presidents, have been in a defensive fight since Walter Reuther, union president and right-wing leader, started out to make good on his campaign promise to purge the Communists (BW—Jun.15'46,p88). Since the Communists, a small minority in the auto union, exercise considerable influence in left-wing councils, the issue was quickly accepted and the fight was on.

Although the left-wing had lost the union presidency to Reuther, it won decisive control of the executive board and so had the new union head in a straitjacket. Reuther, therefore, took his fight to the rank and file.

• **Reuther Forces Win**—The first fruit of his strategy was manifested in mid-June when the Michigan C.I.O. held its annual convention. Reuther right-wingers won every elective office, vaulting to power on the Communist issue.

Late in June, as a result, a highly secret meeting was held by Addes, Leonard, and a score of Detroit local presidents, none of them Communist Party members. Thomas, the third left-wing leader, was in Europe. The meeting voted to eliminate party members from their councils and from all positions of influence in the unions, so far as possible. A public statement on the details of this policy is being prepared; Thomas is expected to subscribe to it.

• **Communists on Spot**—Actual ouster of the Communists would probably be viewed as a brilliant political maneuver by Addes and Leonard. The Communists in the union will certainly not join Reuther, their bitterest current enemy in labor circles, and, with no more than 10,000 or so of the union's 700,000 members, they are not important enough to set up their own caucus.

Consequently, they are almost forced to continue to vote for the left-wing which has disowned them. And, by disowning them, the left-wing has nullified the most formidable point Reuther has been able to raise against it.

Even if the Communist members of

Naughty Marietta came down on the 50-Yard Line

... in Pittsburgh



She made her saucy way down to center stage . . . and standing on the 50-yard line in Pitt Stadium, she poured her lovely melodies into the early June night. It was the kick-off for eight weeks of outdoor operetta by Pittsburgh's Civic Light Opera Association.

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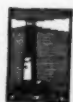


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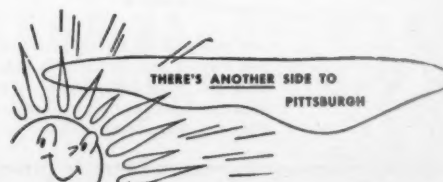


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the union's board swung to Reuther, the left-wing, while reduced, would maintain control. Three board members are reputedly party members, carrying about 110 votes between them. Deducted from left-wing tallies, this would leave the Addes-Leonard-Thomas forces an absolute minimum of 590 votes, and give Reuther a maximum of 580 including tallies on-the-fence today.

• **Fighting to Continue**—Despite elimination of the Communist issue by mutual disownment within U.A.W., no letup in factional difficulties is anticipated. One board member gloomily predicted that the forthcoming board meeting in August at Montreal would be even more bitter than the recent Cleveland session.

Wage Lid Tilted

Builders, under pressures of construction drive, push up pay in spite of stabilization rules. Violations piling up.

A small army of federal investigators—charged with breaking up "black market" operations in skilled construction labor—continued to turn up evidence this week of nationwide violations of building wage stabilization regulations (in mid-June: 5,754 cases in government files). But there was little indication anywhere that the end result would be an evident lowering of construction costs.

Although wages of carpenters, bricklayers, painters, and others in the industry have risen less since 1942 than in other industries (the federal Bureau of Labor Statistics estimates the total increase at 20% as compared with about 40% for manufacturing workers), the lid is theoretically still tightly in place. When other controls went off in August, 1945, an exception was made for those in the building industry. Objective was to keep costs down during the drive for low-cost housing.

• **The Adjustment Board**—Construction wages remained subject to scrutiny, and approval, by a national Wage Adjustment Board, created in 1942 and charged with stabilizing wages in the industry at the July, 1942, level. When the National Wage Stabilization Board was established, the WAB was placed under it.

Legally, wages were held at the base point plus 15% as a living-cost adjustment under the "Little Steel" formula. They varied a little from that (rising an additional 4% in 1945) but could not, as other wages, climb in the current 18% pattern.

• **Program Weakened**—Actually, however, supply and demand in the con-

struction industry and complexity of regulations binding contractors weakened the stabilization program.

When NWSB investigators recently convened a conference of contractors in Milwaukee, they found that 90% of operators there either deliberately or unconsciously were violating the board's regulations. One contractor found for the first time that he had violated the law by continuing to pay \$1.25 hourly—his rate in July, 1942—when \$1 was set as the going-rate in Milwaukee, and by maintaining the 25¢ hourly differential when a \$1.25-an-hour rate later was approved for the area.

• **Other Infractions**—Others found they had broken regulations by paying for travel time, or by observing contract provisions contrary to stabilization rules.

What happened at that conference happened at similar meetings in every other section of the country.

None of the violators agreed that downward adjustments would cut building costs. All protested that, with skilled builders badly needed, any move to reduce their take-home would drive away employees and jeopardize slow gains now being made in residential building.

• **Enforcement Devices**—The pattern was being set for a piecemeal attack on the problem by two possible enforcement weapons—disallowance for tax purposes of wages paid illegally, and, if higher labor costs showed up in jacked-up prices, criminal prosecution under OPA statutes. Neither had worked with notable success in the past. Contractors had preferred the risk of the disallowed higher wage cost to inability to hire badly needed building crews.

Typical of NWSB's problem was the case last week of Morris and Doris Bluestone, who did business in Canton, Ohio, as the Bluestone Construction Co. The company built five-room homes which could have been priced in a competitive market at \$7,250 and sold them for \$5,850, Morris Bluestone told NWSB investigators, by eliminating subcontractors, paying rates higher than established scales, and thereby hiring only top men. The contractor said he could reduce prices another 20%—and still make money—if all wage controls were removed.

• **Bluestone's Argument**—The company argued that it should not be censured for paying workmen better wages and constructing homes for veterans at prices as much as \$1,500 below allowable ceilings. It argued that practices which were the basis of the NWSB complaint were common with the Bluestones before the war.

Investigators did not agree that the practice was harmless. Instead, they found that "the overpayments . . . could lead only to spiral bidding for the limited labor force available. If such



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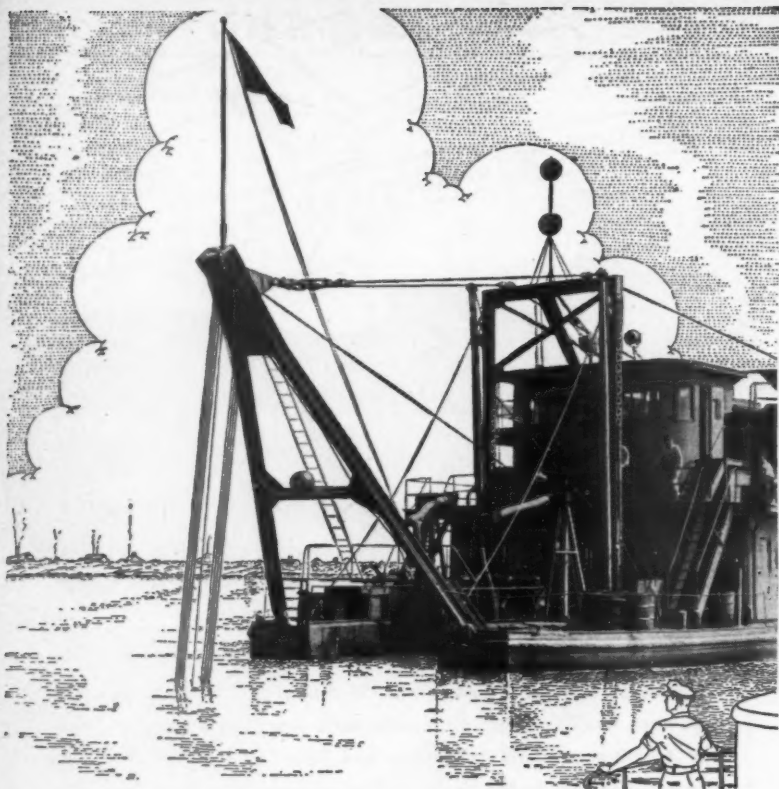
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overbidding were not stopped, the largest commercial builders could monopolize construction labor, thus further impeding the construction of homes."

• **Disallowed as Deduction**—The investigators found that Bluestone wage and salary overpayments totaled \$41,000, and ordered \$15,000 of this amount—representing the amounts overpaid in 1945 and 1946—disallowed as a legal deduction in computing the company's federal income tax.

In criticizing the company's use "of such subterfuges as false 'travel time,'" the NWSB investigators spotlighted one of the several practices in widest use to circumvent stabilization rules. Others include bonuses paid for "extra work" or greater productivity during regular jobs; pay for unworked time such as lunch periods; and pay for dubious overtime, for instance a ninth hour a day—with no more productivity whether the time is spent on the job or appears only on records—when contracts call for eight hours' work.

• **Prewar Differentials**—Prior to the war, differentials often existed between commercial or industrial construction jobs and those done on residential property. Moreover, a comparatively large percentage of home building work at that time was nonunion.

To get residential building under way before commercial jobs were restricted recently, contractors found it necessary to disregard the established differentials (such as 10% in Pittsburgh) and pay home-builders at commercial construction rates. And contractors who had used nonunion labor before found they no longer could do so, but had to take union workers—at higher union rates—or get little work done. All this also tended to raise the building wage rates in disregard of stabilization rules.

The result is reflected in NWSB's construction wage violation case load.

TEXAS STRIKE PROBED

The Texas attorney general's office this week was investigating possible violations of state antitrust laws by Houston building materials dealers and probing activities of A.F.L.'s Houston Building Trades Council for possible illegal collusion to force union membership.

The inquiry resulted from a strike of 7,000 building craftsmen against the Associated General Contractors, to force a closed-shop contract for truck drivers and common laborers, now unorganized. The walkout began two weeks ago, when contractors refused to negotiate with A.F.L. over the two groups. A.G.C. contended that neither truck drivers nor laborers had agreed to join the A.F.L. and that the contractors would not accept any contract which would force union membership. A.F.L. replied that its members no longer could

work with nonunion workers, called the strike.

Building supplies dealers, not directly involved, quickly closed stores and yards, ostensibly to "prevent the draining off of materials" to outside contractors. A.F.L. saw a different reason and filed charges, alleging that the dealers exercise a monopoly on supplies in Houston and were using it against the union, fearing that their truck drivers will be the next A.F.L. organizing target.

Contractors countered with collusion charges against the council.

Organizers' Race

A.F.L. is first of three competing unions to petition for a poll of atomic workers. About 20,000 are affected.

Probability of a quick decision between A.F.L. and C.I.O. in their campaigns to organize atomic power workers loomed this week as A.F.L.'s newly organized Atomic Trades & Labor Council formally petitioned the National Labor Relations Board for collective bargaining elections in the three principal plants at Oak Ridge, Tenn., cradle of the atomic bomb.

Beating C.I.O.'s Atomic Workers Organizing Committee and the Independent International Assn. of Machinists to the NLRB, A.F.L. called for polls of about 10,000 employees of the Tennessee Eastman Corp., 8,600 in the Carbide & Chemicals Co. plant, and 1,500 in the Monsanto Co. research laboratory.

• **Prime Target**—Construction workers engaged on the giant project already are covered by A.F.L. building trades contracts.

Recent removal of wartime bans against union activities in the highly secret atomic power plants (BW—Jun. 1 '46, p95) made Oak Ridge the immediate and most important organizing objective of both C.I.O. and A.F.L. Van A. Bittner, director of C.I.O.'s southern organizing campaign, opened the attack. George L. Googe, southern director of A.F.L., accepted the challenge, announcing that A.F.L. organizers with "\$2 to spend for every \$1 available to C.I.O." . . . also would move in, although "we might be wasting our time, because the Army may change its mind, or its agreement with the producing companies."

• **Worries**—Googe's attitude was based on the War Dept.'s ill-concealed reluctance to see unionization of atomic workers. As late as June 1, Army officers in Washington and in the three major plant areas professed to know nothing of plans for union organizing drives



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This valuable book coordinates and evaluates statistical data now available for business and industry, and indicates where such information may be located. Each chapter has been prepared by an expert of established standing, and presents, in a single field, scope and coverage of information; sources and availability of information (periodicity, primary and secondary sources, and historical data); and relevance of information to management, consumer markets, and industrial markets.

Contents: Introduction; National Income and other Business Indicators; Manufacturing; Mineral Statistics; Agriculture; Wholesale, Retail and Service Trades; International Trade and Payments; Transportation and Other Public Utilities; Accounting Statistics; Money, Credit and Banking; Prices; Population; Housing and Construction; Labor.

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in the plants. But with its authority cut sharply in the project, the service's preferences will prove only wishful thinking.

Army hesitance stemmed primarily from fears that organizing campaigns might mean jurisdictional disputes and work stoppages. NLRB shared this fear and reportedly favored unionization of atomic energy plants on an industrial, rather than craft, basis.

Catch-All Muffs

John L. Lewis' first big raid on C.I.O. textile workers is a fiasco. American Viscose employees scorn U.M.W. lures.

John L. Lewis' United Mine Workers (A.F.L.) emerged a poor second in its first big-scale attempt to raid C.I.O.'s Textile Workers Union of America when rayon workers in seven plants of American Viscose Corp. voted recently to retain the C.I.O. union as their collective bargaining agency.

Of 17,051 employees eligible to vote, 10,908 dropped ballots into the National Labor Relations Board boxes. The T.W.U.A. received 8,987 votes; U.M.W. 1,747; and no-union 141. Thirty-three ballots were challenged.

• **Alternate Pay Plan**—Following its new victory, the C.I.O. union negotiated a 1946-47 contract calling for either a 7¢-an-hour increase plus an improved pension plan, or a straight 8¢-an-hour rise in base pay. Choice between the alternatives was left to the workers, but the national officers of the union urged ac-

ceptance of the former plan which they estimated would amount to an increase of about 11¢ an hour for workers. The company already had granted an increase of 10¢ an hour effective Dec. 2, 1945.

U.M.W. entered the American Viscose labor scene early in 1945 when the United Construction Workers, affiliate of Lewis' catch-all District 50, assigned organizers to all American Viscose plants. Six months ago, when the T.W.U.A. contracts were running out, the U.M.W. field force was increased to 30 full-time organizers.

• **Pointed Argument**—American Viscose was singled out for the campaign because as a major producer of rayon its plans are readily classifiable as both textile and chemical. District 50 was formed originally of a group of local chemical unions, and it still claims primary jurisdiction in all fields of chemical production.

Hence, its organizers at American Viscose made pointed use of the argument: Wouldn't it be better to be considered—and paid—as chemical workers instead of low-pay textile workers?

• **Housing Is Factor**—U.M.W. made little impression with the majority of American Viscose workers, who generally seemed well satisfied with wage gains made through T.W.U.A. and with such added services as a union-inspired housing project for workers at American Viscose's Front Royal (Va.) plant (BW—Feb. 16'46, p96)

COPPER STRIKES END

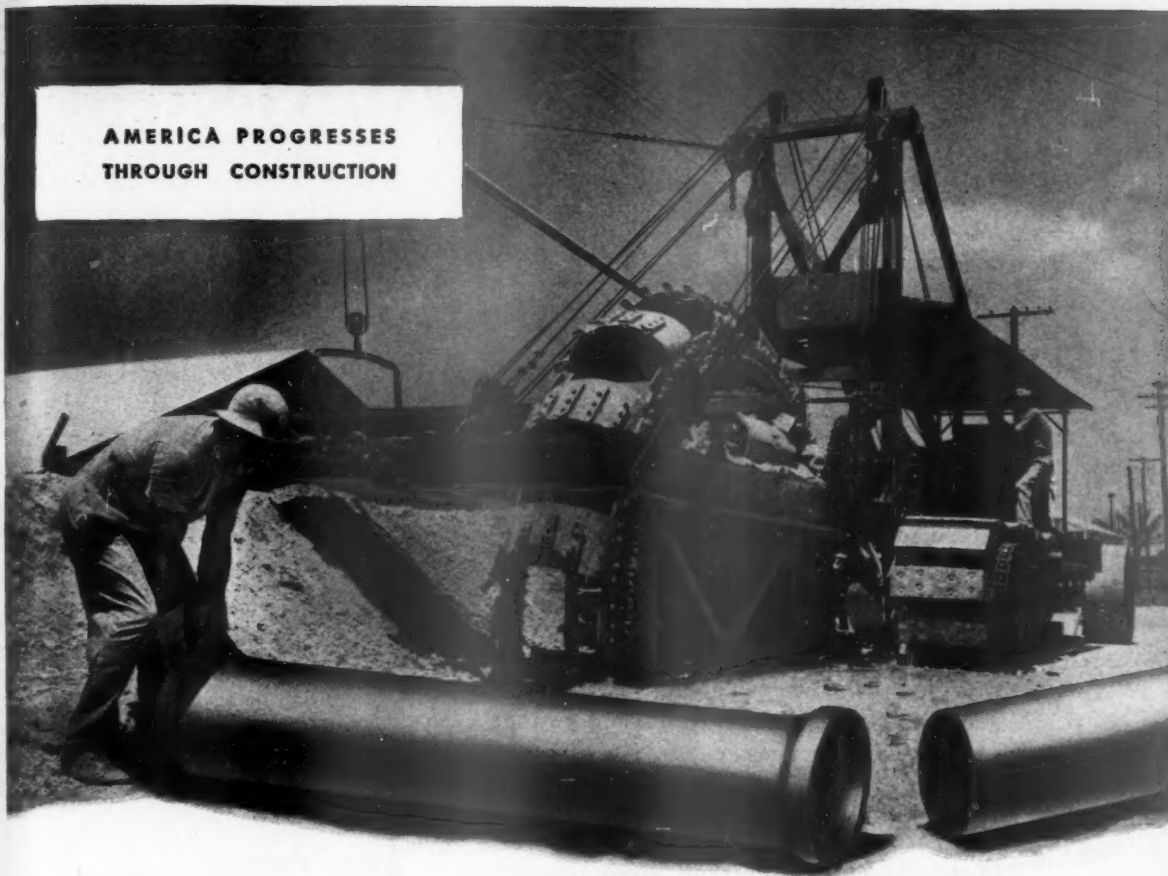
With the last major obstacle to full resumption of copper production out of the way after settlement of the five-

What's Happening to the Cost of Living

	Food	Clothing	Rent	Fuel, Ice, & Electricity	House Furnishings	Misc.	Total Cost of Living
August, 1939.....	93.5	100.3	104.3	97.5	100.6	100.4	98.6
January, 1941*.....	97.8	100.7	105.0	100.8	100.1	101.9	100.8
May.....	102.1	102.8	105.7	101.1	103.2	102.5	102.9
May, 1942.....	121.6	126.2	109.9	104.9	122.2	110.9	116.0
May, 1943.....	143.0	127.9	108.0	107.6	125.1	115.3	125.1
May, 1944.....	135.5	137.4	108.1	109.8	135.0	121.3	125.1
May, 1945.....	138.8	144.6	108.3	110.0	145.4	123.9	128.1
June.....	141.1	145.4	108.3	110.0	145.8	124.0	129.0
July.....	141.7	145.9	108.3	111.2	145.6	124.3	129.4
August.....	140.9	146.4	108.3	111.4	146.0	124.5	129.3
September.....	139.4	148.2	108.3	110.7	146.8	124.6	128.9
October.....	139.3	148.5	108.3	110.5	146.9	124.7	128.9
November.....	140.1	148.7	108.3	110.1	147.6	124.6	129.3
December.....	141.4	149.4	108.3	110.3	148.3	124.8	129.9
January, 1946.....	141.0	149.7	108.3	110.8	148.8	125.4	129.9
February.....	139.6	150.5	108.3	111.0	149.7	125.6	129.6
March.....	140.1	153.1	108.4	110.5	150.2	125.9	130.2
April.....	141.7	154.3	108.4	110.4	151.3	126.0	130.9
May.....	142.6	155.4	108.4	110.3	152.4	126.3	131.5

* Base month of NWLB's "Little Steel" formula.
Data: U. S. Bureau of Labor Statistics; 1935-39 = 100.

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CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

month Phelps Dodge Co. strike, the nonferrous industry this week began whittling down the accumulation of orders which had made copper and brass products the nation's top reconversion bottleneck.

The Phelps Dodge settlement was on the same terms as earlier ones in the American Smelting & Refining Co. (BW—Jun.15'46,p93) and other mines and refineries, all of which followed the pattern of the 18½¢ pay boost given by Anaconda. Just a few days earlier the Utah Copper Co., subsidiary of Kennecott Copper Corp., settled on similar terms, including a reduction of the work-week to 40 hours, maintenance of membership for the C.I.O.'s Mine, Mill & Smelter Workers, and a two-year contract with a June, 1947, wage reopening clause.

C.I.O.'s miners were not called on to strike at some operations outside Utah (tacit agreement was that these would be given any benefits won in Utah). The nonstrikers, however, were assessed \$1 a day for a union strike benefit fund. Many failed to make the payments and under m. of m. could be declared in bad union standing and subject to forfeiture of jobs. But under settlement terms won by management, the workers can be held liable for the strike assessment (about \$125 apiece) only if they signed a pledge to make the payments.

P.S.

New labor troubles were brewing on the nation's waterfront this week, after A.F.L.'s Sailors Union of the Pacific negotiated a contract giving able-bodied seamen a \$22.50 monthly raise, \$5 a month more than the government-dictated increase won recently by C.I.O.-dominated Committee for Maritime Unity (BW—Jun.22'46,p83). The C.M.U. immediately gave notice that if the \$22.50 raise goes through, C.I.O. unions will demand the same amount. In turn, the S.U.P. warned that its members probably would quit work if the figure was pared.

The undercurrent against Communist influences in C.I.O. (BW—Jun.29'46, p94) broke out in a new place this week as Morris Muster, president of the United Furniture Workers of America (C.I.O.), resigned in protest against what he described as Communist "seizure" of his union. Although Muster said that known Communists in U.F.W.A. number only about 1,000, he charged that by controlling key locals they were able to dominate the 43,000-member union's biennial convention. Meanwhile, a right-wing caucus said to represent 20,000 members asked Philip Murray, C.I.O. president, to intervene. Possibility Murray would do so was negligible.

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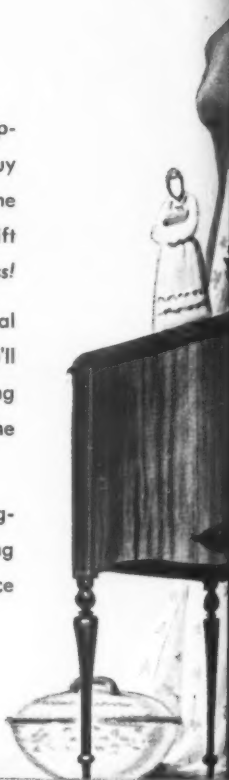
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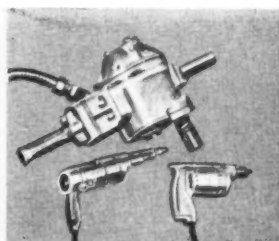
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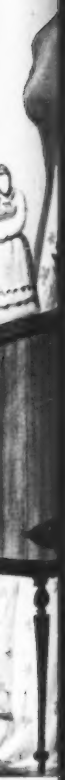


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THE INTERNATIONAL OUTLOOK

BUSINESS WEEK

JULY 6, 1946



You can chalk up as exaggerated this week's claims by the Administration that, without OPA, the U. S. will soon price itself out of the world's export markets.

OPA jurisdiction always ended with the delivery of U. S. goods to the foreign buyer, and American manufacturers have long complained over the unconscionable markup by most foreign importers and retailers once the goods were in their hands.

In the present sellers' market, prices on most export lines can rise extensively before they run into serious competition from manufacturers in other countries.

Chances are that domestic price adjustments, resulting from soaring production, will come in time to keep U. S. export prices at reasonable competitive levels, except possibly for such commodities as cotton.

Far more alarming to foreign traders are the indications of mounting antipathy in the House to the \$3,750,000,000 British loan scheduled for a vote next week.

The latest crisis is a direct outgrowth of bitter resentment by Jews and others in this country at Bevin's statement on the Palestine situation, and at subsequent British moves in the Zionist capital.

Coming on top of the antipathy of Irish-Americans to such aid for Britain, and of increasing unruliness within both political parties, this has shrunk House support for the loan to such a small majority that the Administration is genuinely alarmed over its passage.

However resentful congressional and business leaders may be over the British government's recent handling of the Palestine and other questions, it should not be overlooked that basic long-term issues are at stake in the loan discussion:

(1) Without the loan, the whole Bretton Woods program for world economic rehabilitation becomes more or less meaningless.

(2) Unless Britain is helped financially, London cannot possibly collaborate in a program with the U. S. to restore western Europe to a relatively free and healthy trading bloc.

Specific trade handicaps which would face the U. S. if the British deal were to collapse are typified in the proposed bilateral Anglo-Canadian wheat deal.

Vigorous U. S. objections killed the deal a week ago, but failure to pass the loan would lead promptly to a string of bilateral bargains which London could claim are necessary to assure a maximum trade flow within a tight sterling bloc.

Suddenly conscious of the possible repercussions if present sporadic restrictions become permanent, Washington has made a tardy start at mending its economic and political fences.

In an abrupt about-face, the U. S. has agreed to advance Poland \$50-million to buy surplus military equipment (but not the \$40 million originally offered by the Export-Import Bank), despite the fact that Warsaw has definitely thumbed its nose at the demand that it conduct elections that meet the U. S. definition of "free."

A group in Washington which thinks that loans should be granted for

THE INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK
JULY 6, 1946

economic purposes, without attaching political strings, has apparently triumphed.

Similar policy changes can be expected in our relations with Argentina. Release of Argentine gold stocks a few weeks ago is expected to be followed by other moves to curry support of the Peron government.

Actually, having been top dog in every showdown so far with the U. S., Peron is unlikely to alter any major policy to meet Washington's requests.

Executives can have no reason to expect that recent nationalistic policies in Argentina under its fascist-minded President will be eased to please U. S. investors or businessmen.

A plan for resumption of private trade with Germany is taking shape.

The State and Commerce departments are pushing the plan, and the Allied Military Government, under Gen. Clay, will start soon to establish a chain of billets in which commercial travelers can be housed while canvassing the Reich for business.

Only technical difficulties remain to be overcome, since the Russians are offering no protests on such activity (outside their own zone).

All deals would be handled through the U. S. Commercial Co., since the trading-with-the-enemy law forbids direct private deals with Germans.

Lines in which first deals are likely to be made include ceramics, optical glass, and toys.

Also, the program includes plans for joint purchasing by the U. S. department stores to whose representatives the Army will show samples in a huge central exhibit hall in Berlin.

Despite continuing political upheavals, U. S. electrical manufacturers have started a trickle of Chinese business which may develop rapidly in a restricted area within China.

Gilbert Associates has just contracted to design, install, and get into operation seven steam-electric plants on which U. S. manufacturers have already submitted bids.

Main installations are to be at Sian, Hankow, and Shanghai, and total cost will be \$6 million to \$9 million.

With the prospect for a \$1 billion U. S. loan fading, at least for the immediate future, Moscow has succeeded in securing a 5-year, \$250 million credit in Stockholm to cover a direct exchange of goods with Sweden, providing only that the deal is approved by the Riksdag.

In addition to the loan, which calls for \$50 million of Swedish exports a year to the U. S. S. R., the agreement stipulates a balanced trade of \$25-million a year beginning immediately it is approved.

If you contemplate doing business with Mexico, you will be interested in an offer by the American Chamber of Commerce in Mexico to supply you with a list of "Mexico's Most Important Laws, in English," from which you can order copies at stated prices.

Address of the American Chamber of Commerce of Mexico is San Juan de Letran 24, Mexico, D. F.

BUSINESS ABROAD

British Capital Finds a Job

New finance corporations offer favorable credit terms to expand small businesses and modernize run-down industries. Insurance firms and English and Scottish banks provide loan funds.

LONDON—Semisocialist Britain has two new private finance companies—the Finance Corp. for Industry and the Industrial & Commercial Finance Corp.—which promise to play a vital role in the reconstruction of British industry. They may also set a limit to governmental encroachment upon the domain of private finance.

Both institutions, products of Treasury-sponsored discussions between the Bank of England and the rest of the British banking and financial community, began operations in mid-1945. They were designed to help fill the famous "Macmillan gap" in the British credit structure—the gap alleged by the Macmillan Report of 1931 to exist in facilities for the long-term financing of small business ventures and run-down major industries.

• **Organization**—The larger of the two companies, the Finance Corp. for Industry, has a capital of \$100,000,000 and borrowing powers of four times that amount, or total resources of \$500,000,000. Its capital is subscribed in almost equal portions by consortiums of the insurance companies and the investment trust companies, and by the Bank of England. Provision has been made for the FCI to get its loan capital from the English and Scottish banks.

The Industrial & Commercial Finance Corp. has \$60,000,000 capital and, with its borrowing powers, total resources of \$180,000,000. Capital is subscribed by the English and Scottish banks, with a token subscription by the Bank of England. Loan capital is made available to the ICFC from these banks in the same proportion as they subscribe for shares of the company.

• **Purposes**—The FCI was set up to provide capital in sums of \$800,000 or more for the modernization of industrial enterprises which, although showing prospects of economic success, would not otherwise be able to obtain funds. Clients will repay loans by refinancing themselves through the market as soon as their business expands enough to appeal to outside investors.

It was originally expected that modernizing basic British industries, such as coal, steel, and cotton, would require aid from the FCI. But nationalization of coal mines has removed one set of

clients, and government plans for steel will probably remove another.

At the end of March, 1946, the FCI had advanced \$1,018,000, had approved loans of \$5,340,000, and was considering requests for \$8,000,000 more.

• **For Smaller Needs**—The Industrial & Commercial Finance Corp. was designed to fill the need for long-term capital of from \$20,000 to \$800,000 which cannot be had from the banks and is too expensive to raise through the stock market. Requirements like this were once met out of reserves or by advances from local men of wealth, but high taxation has cut off these sources and created a gap in the British credit structure.

Since September, 1945, the ICFC has granted loans of almost \$10,000,000, but not all of this has been drawn upon owing to the shortage of machinery and

supplies. Applications are increasing month by month, a few coming from the commercial field but most of them from a wide variety of small industrial firms throughout the country.

• **Interest**—The average loan to date is less than \$150,000 and runs for 15, 20, or 25 years. Rates charged vary from 4% to 5% for secured loans and from 4½% to 5½% for unsecured. When the risk is great, and the FCI takes participating preference shares, the rate may be 5½% or 6%.

Under the aggressive leadership of 39-year-old General Manager J. H. Lawrie, the ICFC has an enterprising team of young men, including a liaison department of engineers to advise clients on industrial problems.

• **Government Loans**—The ICFC is not alone, however, in its effort to put small business on its feet. In Britain's Development Areas (once called "Depressed Areas") the government assists directly with financing if applicants cannot get money elsewhere and the Board of Trade approves the project.

The Treasury has already had numerous requests for small loans (\$20,000 to \$75,000), but most needs have been met through the usual channels or the ICFC.

The government may soon overlap the FCI in large-scale financing, such as that required by the cotton industry. Under the Borrowing (Control) and



GLAMOR FOR CHANNEL CROSSINGS

Shortage-plagued U. S. railroad car builders are having their troubles producing extra-de luxe accommodations for passengers (BW—Jun. 22 '46, p19). Meanwhile—in spite of production difficulties—one of the swankiest setups yet to materialize makes its debut in Britain. It's a glamorous buffet car and bar (above), pride of Southern Ry.'s Golden Arrow, London-to-Continent train. A rebuilt Pullman, it is now sheathed from top to bottom in laminated plastics, product of Waverite, Ltd. Upholstery is pink and white asbestos material; curtains are translucent vinyl. In the midst of swank, however, is a reminder of Britain's bare cupboard: The shiny plastic pastry rack (right) is empty. Other similar cars are being built—a few for Argentina.

Guarantees) Bill, soon to pass Parliament, provision is made for the Treasury to guarantee loans up to \$200,000,000 a year, to provide the government with an "industrial reconditioning" as well as an "anti-slump" weapon.

• **Mutual Aid**—To coordinate their lending activities with the government's reconstruction program, the FCI and ICFC inform the government departments concerned of major developments and get advice on the position of supplies essential to an applicant's project. Coordination is also achieved by the fact that financing which runs to more than \$200,000 must be screened by the Capital Issues Committee (BW—Mar. 16'46,p68).

The bulk of investment expenditures for the modernization of British industry will come, of course, out of reserves or out of new capital issues, and the part to be played in this field by the Treasury and the two finance corporations should not be exaggerated.

Mexico's Next

That Aleman will win is generally conceded. For business it means that no very drastic change need be expected.

MEXICO, D. F.—Though the country will not go to the polls until July 7, the outcome of Mexico's forthcoming presidential election is a foregone conclusion.

Miguel Aleman will be elected President of Mexico for the 1946-1952 term and—it can be written with confidence—he will not bring about, either for Mexican or for foreign businessmen in Mexico, any drastic changes from the present situation.

A friend (and until his resignation to start his political campaign, a cabinet member) of the present Avila Camacho

administration, Aleman will undoubtedly continue the middle-of-the-road policy of his predecessor.

• **Protestations**—Acutely aware of the fact that many businessmen have been inclined to prefer Ezequiel Padilla as candidate, Aleman from the very beginning of his campaign took great pains to convince the Mexican industrialists in general that he would defend their interests during his term of office. (Padilla is reputed to be favorably inclined toward business interests in general, and toward U. S. interests in particular, a reputation which makes him rather unpopular with certain classes.)

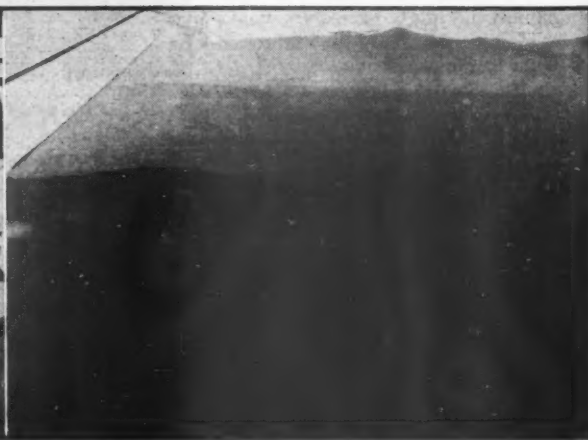
Domestically, Aleman has made an exceptionally dramatic campaign to capture the business vote.

In tours made to every part of the country in the last twelve months, he organized some two dozen special round-table discussions of industrial topics, taking one specific industry at a time, and holding the meetings in representative towns.

• **Examples**—In Monterrey, for instance, he explored problems of the iron-and-steel industry; in Puebla, the textile industry; in Cuernavaca, the tourist trade; and in Mexico City, the movie industry.

In each case, he made a general survey of the industry, underlined the existing difficulties, and gave to the in-

Serenely confident that he'll be Mexico's next president, attorney Miguel Aleman (right) has left no stone unturned in his campaign. He has plastered his posters in all of Mexico's 28 states, has distributed toys to constituents' offspring (below)—a tactic reminiscent of Tammany—and has hewn his name on the very mountain tops (below, right) for air travelers to read. His wooing of the support of business has been less spectacular though just as thorough.





Chessie's Railroad Gets Harriman Award

For Safety in 1945

THE Chesapeake & Ohio Railway has just received the Harriman Gold Medal for Class A railroads. The award was given by the American Museum of Safety for the utmost progress in safety and accident prevention in 1945.

This is no occasion for back-patting or self-congratulation. Instead, it is an opportunity to point out that the American railroad industry as a whole has such high standards of safety that any differences which may exist between the yearly safety

records of individual roads are very slight indeed.

We are quite as proud of the safety record of all railroads as we are of the gold medal and certificate awarded us for our own 1945 record.

To all of our Chesapeake & Ohio people, whose work in 1945 made it possible for us to again receive this honor, we say a heartfelt thank you.

We shall try to keep up the good work in the years to come.

Chesapeake & Ohio Railway

Terminal Tower, Cleveland 1, Ohio

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from 1 to 25 microns

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dustrialists definite assurances that their problems would be sympathetically resolved by his administration.

Incidentally, this was the first time in Mexico that a presidential candidate organized such round tables, in which representatives of both the operators and the trade unions concerned took part.

• **Agency Publicity—Abroad,** Aleman has moved even more dramatically by employing a United States public relations agency to see that he and his campaign are properly publicized.

Businessmen, with the exception of a small group of extreme rightists who prefer Padilla, are inclined to believe that Aleman will do a satisfactory job, considering the level of the Mexican politics. Also, they point out that Aleman, being on good terms with the present administration and a member of the ruling group (the so-called familia revolucionaria, whose members get all the juicy jobs in turn), his election will probably mean fewer battles, fewer changes, and less trouble during the transitional period, and consequently more stability for business.

• **Realistic View—**They don't, of course, expect Aleman's access to power (or Padilla's, for that matter) to transform the government into one honest enough to root out the well-intrenched system whereby governors of states, politicians, and top civil servants will, as before, do their best to get rich as quickly as possible during their term of office.

Neither do they believe that the all-dominating “mordida” (graft) system will fail to be a typical feature of Mexican business conduct. Nevertheless, it is not expected that things will be worse than now, and some even think that the future President may be capable of curbing the apparently limitless appetite of the run-of-the-mill politician.

• **Nothing Drastic—**In brief, business is expected to continue under Aleman more or less as today. No large-scale confiscatory measures, such as the seizure of large estates for the benefit of landless peasants, or imposition of exceedingly high taxation on commerce or industry, are expected to follow Aleman's election. Final results will be made public by the Mexican Congress, 96% of which is composed of members of the Partido Revolucionario Institucional, or PRI, the official party backing Aleman.

It is not expected that the new administration will be in a better position than the present one to stop the current spiraling inflation. Due to the absence of an energetic taxation policy, and without personnel capable of enforcing real tax controls, prices will almost surely continue to rise, and popular discontent and strikes will multiply.

• **Labor Troubles—**Occasional wage increases—always lagging behind the price

increase—will have to be granted, and labor unions, indifferent to the productivity of the workers, will continue to be a nightmare for industrialists.

Despite these obstacles, industry and trade will thrive behind the protection of constantly rising prices and high custom tariffs, until a renewal of large-scale competition on the part of better equipped industrial countries upsets the Mexican applecart.

CANADA

Minor Tax Cut

Canada's cautious policy includes a small reduction in personal income levy. Co-ops lose special treatment.

OTTAWA—Canada's first budget covering a full year of peace indicates a cautious policy on tax reduction. Actually, Canadians will pay taxes throughout the whole of 1946 at little less than the rates which prevailed during the war.

• **Moderate Reductions—**In his budget speech in Parliament last week Finance Minister J. L. Ilsley declined to follow the example set at Washington and London and abolish the excess-profits tax. He reduced it from an effective 20% to 15%. He slashed the corporation tax from 40% to 30% but at the same time issued either an invitation or a directive to provincial governments, which withdrew from the corporation tax field during the war, to come back in. He made moderate reductions in personal income tax.

The tax reductions, however, take effect only at the beginning of 1947 and since Canada's fiscal year runs from Apr. 1 to Mar. 31 he gets revenue at the old rates for three-quarters of the year and yet forecasts a budgetary deficit of \$300,000,000.

• **Urges More Production—**Ilsley called for support for the government's policy of orderly retreat from controls, but warned about inflationary pressures which made it impossible to let prices and wages go now. The answer to inflation and the way to speed up decontrol, he said, was to increase production of civilian goods and to that end called on manufacturers to produce to capacity at the lowest possible price.

Most significant feature of the budget was a new approach to the vexed problem of Dominion-Provincial finance, subject of inconclusive negotiations extending over the past ten months.

Ilsley for the first time announced that the federal government would deal

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with the provinces one at a time in its plan to get the local governments out of income, corporation, and estate taxes and repay them with larger subsidies.

• **Tax on Cooperatives**—He plumped for the "poor province" viewpoint put forward by Saskatchewan and Manitoba and against that of the richer provinces of Ontario and Quebec which are against sharing their richer sources of revenue in these fields with the whole country. Provinces willing to get out of the tax fields wanted by Ottawa are now offered five-year agreement. Provinces not willing to do so are given the opportunity to reimpose provincial income and corporation taxes but at the cost of putting a double burden of tax on their people.

Definite decision to tax cooperatives was announced. From now on co-ops will be taxed on the same basis as other businesses. New bona fide co-ops, however, get tax exemption for three years. Patronage dividends paid by co-ops and other businesses are deductible from taxable income, so long as income amounting to 3% of capital employed is retained in the business.

• **Tariff Policy**—For the second year in succession the budget announces a standpat policy on tariffs. That will remain until bargaining at an international trade conference has taken place.

Españoles:

Señalamos rápidamente todo lo relacionado con la exportación de un automóvil particular, modelos 43 y anteriores, trámite de exportación en vapores y flotas de mar, trámite del Harbortrust, trámite del seguro marítimo (seguro obligatorio), selección del modelo, trámite de embarque (desembarque, flete y seguro), trámite de permisos de exportación, Caravel de embarque, auto-marítimos, etc. etc. Despachos Palma Norte 550-304, de 10 a 12

EXPORTACION DE AUTOMOVILES

Por acuerdo del C. Secretario del Ramo, no se autorizará a persona alguna la exportación de automóviles de cualquier modelo, a partir de esta fecha.

México, D. F., a 14 de junio de 1946.

Secretaría de Hacienda y Crédito Público

Dirección de Estudios Financieros.

Depto. de Control de Comercio Exterior.

WHICH DO YOU READ?

Typically Mexican are two coupled newspaper ads: one of a government notice specifically prohibiting the export of autos, the other—with top billing—offering ways to get around "red tape." The Mexican embargo is designed to halt the flow of U. S. cars via Mexico to Spain, where they reportedly fetch as much as \$10,000 each. It's geared to a U. S. Commerce Dept. edict banning the export of autos as "personal baggage" unless the "traveler" can prove six-months' ownership, U. S. residence for a year.

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ALL ROOMS AIR-CONDITIONED
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Universal Pictures Company, Inc.



DIVIDEND

The Board of Directors has declared
a quarterly dividend of 50¢ per share
on the outstanding common stock of
the Company, payable July 31, 1946
to stockholders of record at the close
of business on July 15, 1946.

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THE MARKETS (FINANCE SECTION—PAGE 75)

The Market—1946 to Date

U. S. business this week was operating for the first time in three years without benefit of price ceilings. The sudden, unexpected return to a free economy precipitated a vast confusion, which was further confounded by the prospect that Congress might reapply the brakes (page 15).

This fundamental uncertainty of business on all fronts had its inevitable reflection in the week's markets, despite the basic assumption of most traders that the country was heading into a higher-price, higher-cost economy, regardless of congressional action.

• **Looking Back**—Nevertheless, until such time as Washington had finally disposed of the question of price and profit controls, securities owners could not look forward with any real confidence—and so the moment of great crisis found many of them looking back, re-appraising present quotations and averages in the light of the longer-term trend. Among their questions were:

How secure is the market against any possible shock?

What does the record of 1946 indicate about the inherent stability of quotations?

Stocks opened 1946 in ebullient fashion. Buying soon became rampant and prices kited. After all, didn't everyone know that spring would see reconversion completed and production (profits, also, with the excess-profits tax a thing of the past) shooting sharply upward so as

to meet the record-breaking demand?

• **Premature**—Such optimism, however, proved premature. Strikes began to hamper many important basic industries, and shortages of materials hampered even those who did manage to sidestep labor troubles.

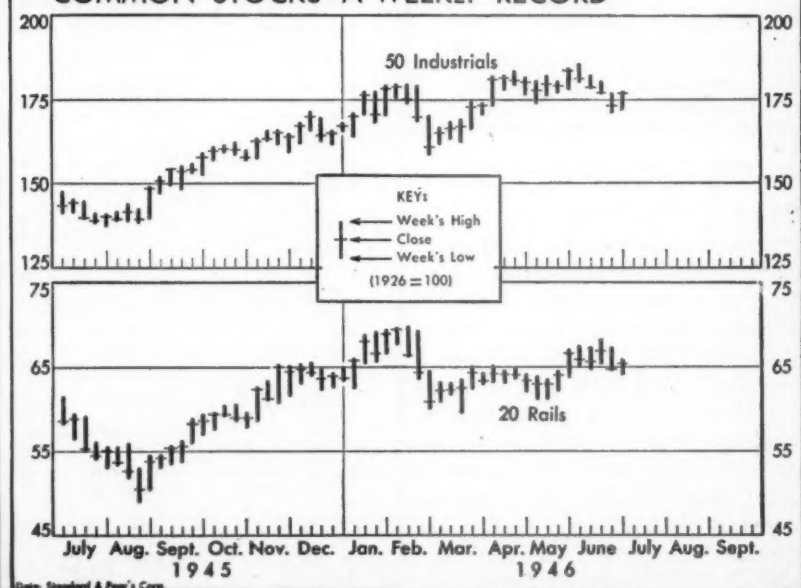
The early-1946 bulls also discovered that labor and production troubles weren't the only problems business faced. Many 1946 first-half profit margins were being badly squeezed by ever-rising operation costs and price ceilings. OPA's reaction to requests for price relief further chilled stock market enthusiasm.

As a result, the stocks so avidly purchased earlier in 1946 were being quickly jettisoned by mid-February. Markets that had been thin in the upside proved even thinner under selling pressure. And before equilibrium was restored, the bull market which began in 1942 had absorbed a shellacking.

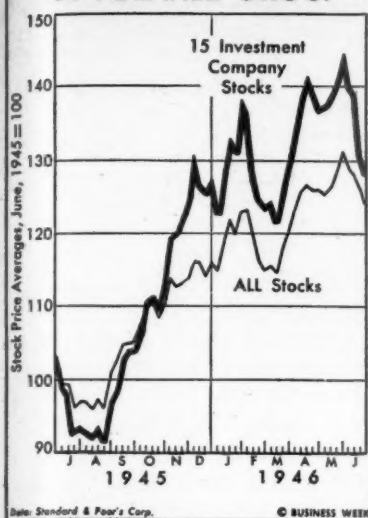
• **And Then New Highs**—Nevertheless, despite continuing labor trouble and the absence from the market of its early-1946 vigor, the Dow-Jones industrial price average has since been able twice to push through to new highs—most recently in late May. Its last new high was likewise "confirmed," in Dow Theory parlance, by the subsequent attainment of a brand-new peak by the D-J rail index.

Thus, early last month there were hopes that the bull market was girding itself for another wild surge forward. June's only really "wild surges" (BW—

COMMON STOCKS—A WEEKLY RECORD



A VOLATILE GROUP



Jun. 29 '46, p. 114), however, were several sharp, disturbing "last-hour" selling sprees. And stock averages slumped badly despite some last minute technical rallies.

• **Anybody's Guess**—When the market will again acquire its earlier zip is anybody's guess. Congressional action on price ceilings—their final abandonment or at least their inevitable easing—may yet provide the vital spark, one that's vital enough to offset the sobering effect of the many bad first-half earnings statements soon to appear.

One thing, however, does appear certain. The much-touted postwar boom is likely to prove a series of waves. Individual industries, for example, will reach their production peaks at different times. Some will exhaust backlogs sooner than expected, and some businesses are going to be more profitable than others.

• **Timing Is Vital**—Careful watching of holdings will thus be necessary to make sure that earnings are headed for levels commensurate with stock valuations, that traders don't overstay markets, and that they are not too late in switching to more attractive situations.

More than ever, traders should remember the old Wall Street adage, "Bulls can make money; bears can make money; pigs can't."

Stock Trading by Proxy

Investment trusts are not an American invention. That honor belongs elsewhere, according to Wall Street's Arthur Wiesenberger & Co., investment trust Boswell whose yearly "Investment Companies" manual is the nation's last word on the subject.

It was the Scotch who first discovered that small investors often fare better in the long run when their capital is con-

solidated and handled by experienced financial managers. And Scotland first saw the idea capitalized on in the 1880's.

• **Across the Seas**—The U.S., in fact, was very slow in adopting the idea. However, the frenzied 1920's saw investment trusts multiply like rabbits. By 1929 there were 675 active American units with \$7 billion of resources.

Unfortunately, few of the early U.S. investment trusts resembled their Scotch forebears. The Scotch have always emphasized income and safety of principal. Capital gains have been secondary, and they have used them, plus income at times, to build up reserves against future bad times.

• **Of a Different Mind**—These policies, however, were too conservative for the speculative tastes of the roaring twenties. Most U.S. investment trusts organized then paid little attention to income or safety of capital.

Few such companies escaped trouble when the 1929 bubble burst. Failures and reorganizations were soon very plentiful.

By 1935, as a result, the SEC started investigating the investment trust business. No one was surprised, either, when this uncovered many abuses of trust, and grave defects in capital structures and managerial setups. And few Wall Streeters objected when out of the inquiry emerged the Investment Co. Act of 1940.

• **Reforms**—This legislation, administered by SEC, now governs the investment trust trade. Under its provisions many former abuses are prevented. Irresponsible promoters, for example, are discouraged from setting up new investment companies; basic investment policies must be revealed to stockholders and can't be suddenly changed without their approval; conservative capital structures must prevail; and directorates cannot be dominated by investment bankers or a company's regular brokers.

As a result, after long showing distaste for securities of investment trusts, the public in recent years has again displayed interest in such issues. This has been particularly true since the bull market started, and the group's common stocks, while obviously volatile, have lately put on a better-than-average performance (chart), due to the success of present investment policies.

• **No Crystal Ball**—Investment trusts, however, still appeal mainly to those with speculative tastes. Capital gains, not income, continue to be the prime target of most managements, and no one knows how successful the group will prove when the bull market finally starts to fall apart. After all, not even investment trust executives, bright as they may be, possess a crystal ball that can tell them in advance the height or depth of major market moves.

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THE TREND

ATOM CONTROL: THE DOOR IS STILL OPEN

The other day we traveled up New York harbor with a leading American authority on what might be called the politics of atomic energy. As we approached the dramatic skyline of the U.S. financial center, he descended into deepest gloom. New York had not been conceived, either architecturally or as an institution, with the atom bomb in mind.

Since we had just read the revealing report on atomic energy appearing on pages 65-72, which we heartily recommend to you, we could understand our friend's qualms. They underlined again the overwhelming importance of reaching some agreement with other nations on how to tie up this vast new force to work exclusively for the welfare of mankind. We could not, however, share his conviction that there is no substantial hope of such agreement, primarily because of irrepressible conflict between the U.S.A. and the U.S.S.R.

• **It is in this something less than despairing frame of mind** that we have been studying the proposal which the Soviet representative made to the Atomic Energy Commission in response to the Baruch proposal, which is briefly summarized in the report. Boiled down to essentials, the Soviet plan suggests two practical measures:

(1) An international agreement to forbid the production and use of atomic weapons, including the promise of any nation possessing such weapons to destroy existing stocks within three months after the agreement goes into force.

(2) The establishment of two committees of the commission to study the atomic problem in all its aspects and come up with recommendations as to what the commission should do.

One committee would recommend the means of exchanging scientific information on atomic theory, technical and industrial know-how, and raw materials. And a second committee would concern itself with ways and means to prevent the use of atomic energy for harmful purposes.

• **These proposals can be squared** with many of the fundamentals of the Baruch statement. For the U.S. also has explicitly agreed that the production and use of the atomic bomb should be outlawed; and it has promised to dispose of its bomb stockpiles—but only after some form of international control has been set up along lines acceptable to it.

Nor do the Russians rule out the Baruch recommendation that an international authority control and manage all raw materials and facilities necessary to produce fissionable materials. Certainly Gromyko's committees would consider this proposal as one of various alternatives, just as the special "committee of the whole" now set up by the commission will give it most serious study. And inasmuch as the proposed international authority represents an example of public ownership in

the widest sense, it hews closer to the Russian way of doing things than to the American.

• **Where, then, are the main areas of disagreement?** There is, of course, the veto. Neither Gromyko nor Baruch has made very clear exactly where he wants the veto power to begin or to end. Until they do, arguments about it can go on ad infinitum. We do not believe Congress ever will pass over to a group of nations the power to vote the U.S. into war. So, on at least one question—that of ultimate sanctions against a violator of any atomic agreement—the U.S. will want the veto power.

The thing about the veto to which the U.S. really objects is the manner in which the Soviet now employs it to block investigation and inspection. But it is not clear that the Soviets are talking of the veto power in this sense. It has been pointed out (BW—Jun.29'46,p5) that any agreement on atomic energy can spell out the legal basis and procedure by which supposed violations are investigated and judged so that, in effect, the procedure becomes a matter of law, and not a subject for the veto. Whether the Soviet looks upon the matter in this light, we don't know. Gromyko implies that it is one of those things for the committee to study.

• **In spite of all the concentration** on the veto issue, it appears to us that the most heat, misunderstanding, and potential ill-will will be generated in determining at precisely what stage the U.S. is to give up its atomic monopoly. No final agreement on this question can be satisfactory to everybody. The Russians obviously want all of our atomic secrets to be disclosed at the earliest possible moment. We obviously want to hold them until completely convinced that safe and strong control machinery is in place. One thing is certain: As long as any element of the atomic problem lies outside whatever mechanism of control is finally started, all nations will continue to work furiously on their own independent development of that element.

Under the circumstances atomic energy will, no doubt, continue to be a very sore spot in the international body politic until final and complete controls have been instituted, or until our expert friend's forebodings have been horribly fulfilled. Establishing such controls is unfortunately not a matter of months, but of years. In the meantime, everything possible must be done to prevent the sore spot from becoming cancerous.

Many recent actions of the Russians, particularly at the negotiating table, show only too well how difficult this is likely to be. But at the present stage, at least, we cannot see anything in either the Baruch or the Gromyko statements that seems to make the task completely impossible. We can still look at the New York skyline without shuddering for its future.

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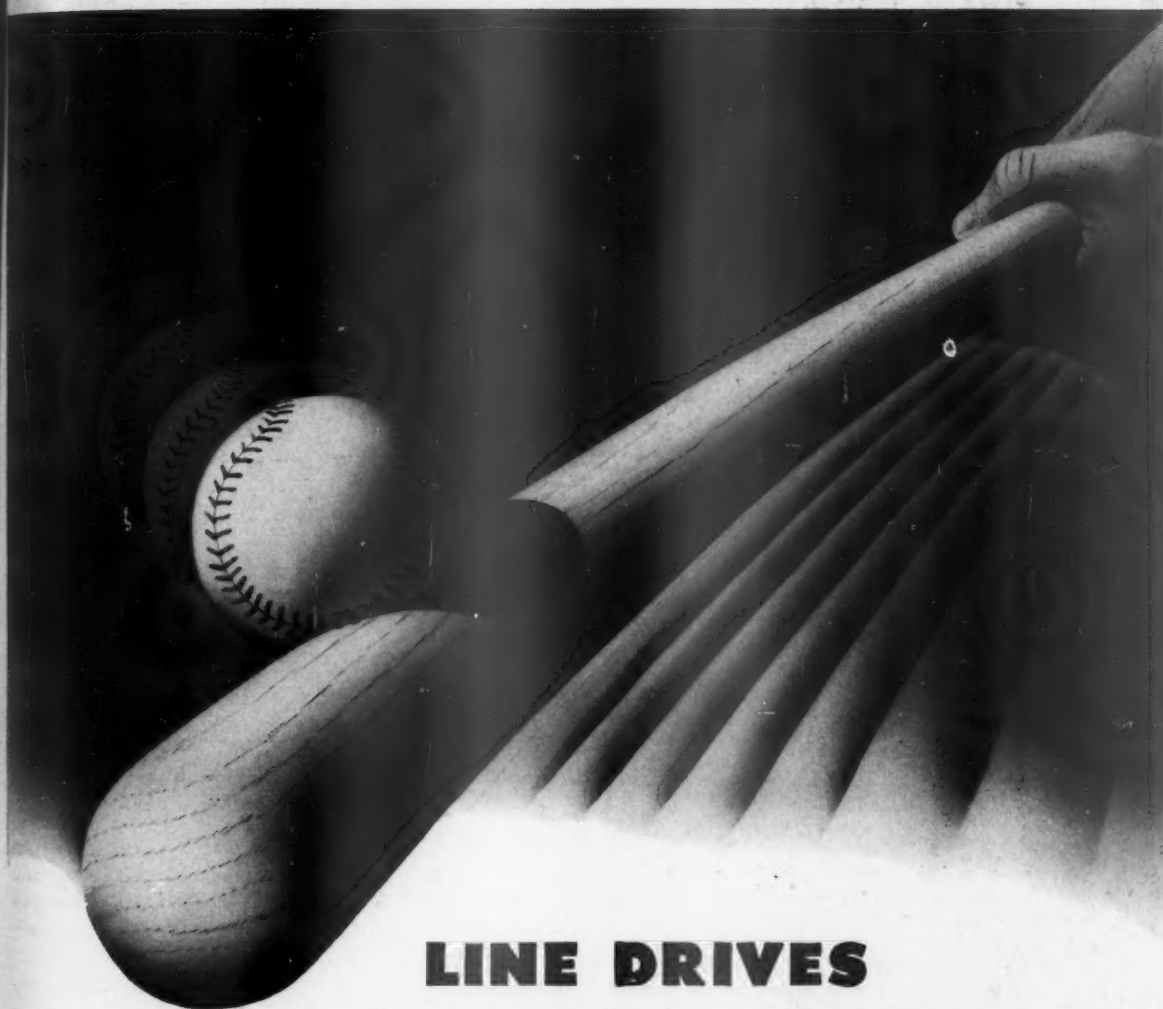
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XUM



LINE DRIVES that bat ball bearings around



What gives . . . in a crane or hoist . . . when it picks up a couple thousand pounds of dead weight and swings with it? Or drops it fast and stops it dead? Ball bearings . . . for one thing! No slugger ever smacked a ball half as hard as the wallop a ball bearing gets from dead-weight tons multiplied by momentum. Only difference . . . the ball bearing can't take off over the fence. It's got to stay there and take the shock . . . and be ready for the next one. The big fellows that toss those ton loads around have a ball bearing that can take everything thrown

at it without frequent inspection, adjustment or fussy lubrication. It's the Fafnir "Maximum Type" . . . the toughest member of a famous line. Fifty per cent tougher, half again as much bearing capacity as the conventional type ball bearing . . . because it has a third to a fourth more balls, made possible by the Fafnir designed filling slot which in no way interferes with the ball track.

It's a stock ball bearing too . . . not a "special". Which is what Fafnir means by "the most complete line in America." The Fafnir Bearing Company, New Britain, Connecticut.



Fafnir Maximum
(W) Type

MOST COMPLETE LINE IN AMERICA

FAFNIR BALL BEARINGS

A building needs a cool shower, too

For generations, men did everything they could to get water off roofs . . . and quick. Then it was discovered that water on a roof could be good, not bad. Now many people don't depend on Nature putting it there . . . they put it there with pumps.

The reason? To beat the heat.

Water on a roof deflects the sun's rays and cuts down the summer heat within the building. The evaporation of the water dissipates heat at the rate of 1,000 Btu. per pound of water. Water-cooled roofs cut down the peak temperatures on the top floor of a building by 10° to 20° during the summer. Tests show that roof cooling could prevent 90% of heat due to solar radiation from passing through the roof and into the building.

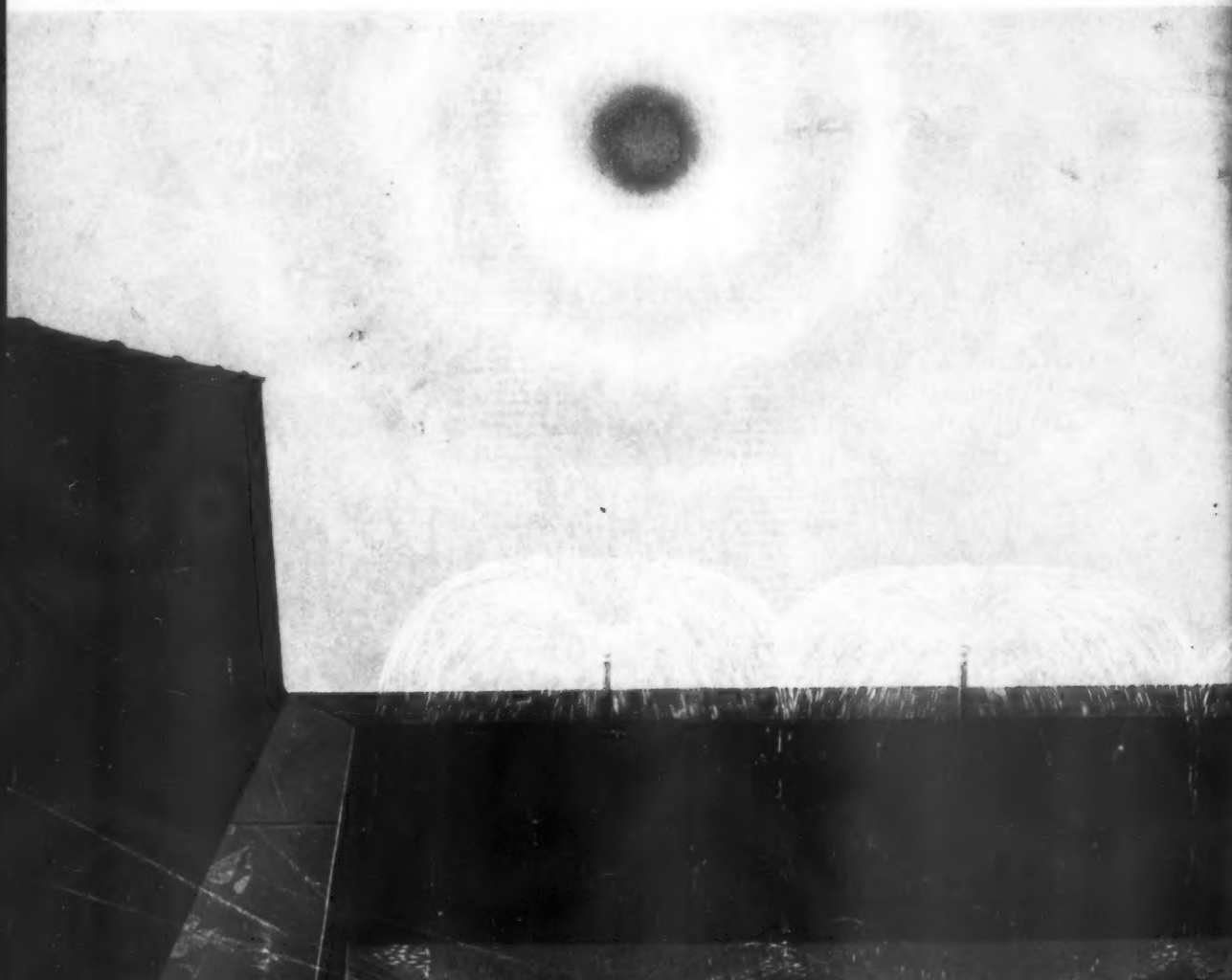
The water-cooled roof can be used either alone or in conjunction with an air conditioning system. If you plan to install air conditioning, a water-cooled roof can

reduce the load on your system or enable you to buy a smaller and less expensive one. If the water for the air conditioning system is expensive or scarce, it can be cooled on the roof and recycled to the system.

The thing that made the water-cooled roof possible was the fact that coal tar roofing materials are not damaged by either prolonged or intermittent contact with water. Most of the constituents in coal tar pitch are practically insoluble in water. If you plan to use your roof for cooling purposes, specify Koppers Coal Tar Pitch Roofing and send for the folder on water-cooled roofs.—Koppers Company, Inc., Koppers Building, Pittsburgh 19, Pa.

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